

INDIAN HORSE NOTES.

BY MAJOR C-

FIFTH EDITION.

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INDIAN HORSE NOTES.

INDIAN HORSE NOTES:

AN

EPITOME OF USEFUL INFORMATION,

ARRANGED FOR READY REFERENCE ON EMERGENCIES
SPECIALLY ADAPTED FOR OFFICERS AND
COUNTRY RESIDENTS.

ALL TECHNICAL TERMS EXPLAINED AND SIMPLEST
REMEDIES SELECTED.

By MAJOR C——,

Author of "Indian Notes about Dogs" (Seven Editions);
"Military Law, its Defects and their Correctives;"
"Ninety Days to Australasia, &c."

Fifth Edition

BEING A REPRINT OF FOURTH EDITION

With Additional Information.

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PREFACE TO THIRD EDITION.

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A THIRD edition containing additional (and I trust valuable) information has been prepared, as the second was exhausted, though it was very large.

This book was originally only intended for use in India, but an unexpected demand for it has been made in England and Australia, and also by officers of the United States Cavalry, which is very gratifying to me.

LONDON,
16th *February*, 1894.

C ———.

PREFACE TO SECOND EDITION.

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THIS work is much the cheapest of its kind ever published in India, and the lightest (that it may be carried even when on active service), though the contents could easily have been made into a thick and expensive volume.

For Military men, the rules for compensation for chargers and for veterinary attendance have been inserted, besides many practical hints.

Diseases, their symptoms and treatment, are arranged in three parallel columns. By this unique method, if it is not exactly known what is the matter with a sick horse, the middle column of symptoms can be first searched until those pertaining to the case are recognized, when the nature of the disease and its treatment are at once seen.

The Glossary explains in simple language those technical terms which often puzzle the reader of veterinary works, and there is a Hindustani Vocabulary.

A comprehensive Chapter on Lameness has been added to this Edition; also one on Betting, explaining fully the theory and practice both in England and in India.

The chief word of each paragraph is printed in capitals to catch the eye readily, and a very copious Index reduces the usual trouble of reference to a minimum.

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PART I.

HINTS ON BUYING AND SELLING HORSES.

NOTE.—If the reader does not understand common terms, such as *hock*, *fetlock*, &c., he will find them explained in the *Glossary of Technical Terms*, page 77.

GENERAL RULE. Everyone, specially officers, on buying a horse should write down a proper description of it, and put some indelible mark on the back under the saddle, or on the hoof, for identification in case of loss or theft.

ADVERTISEMENTS. In reading description, reflect carefully on what is *not* mentioned,—*e.g.*, if it be not at least stated that the horse is believed to be sound, you may be pretty sure it is known to be unsound, as seller says the best he can. The word “handsome” has no meaning, being merely a matter of personal opinion. Ascertain who the seller is, and ask (1) why he is parting with the horse; (2) whether it is in steady work; (3) when it was last ill or off work; (4) has it any *trick* (such as sticking his head straight out, &c.) or *vice* or defect? If replies be not satisfactory, drop the correspondence.

AUCTIONS. Read the rules carefully. At some auctions you might, on a Saturday, at 4 p.m., buy a horse warranted perfectly quiet, and on the following Monday you might be able to prove it was notoriously vicious; still the auctioneers would refuse redress, because your objection should, by their printed rules, have been made *within twenty-four* hours of purchase.

VETERINARY OPINION is always desirable when procurable, and the fee is money well laid out, whether it induces you to refuse to buy, or otherwise. Fee varies from Rs. 5 to Rs. 16 in India. First write down what you require in a horse, and then let the Surgeon decide if the horse in question answers those requirements. Some purchasers hardly seem to know what they do want, and thereby give unnecessary trouble; for instance, a thoroughly good driving horse might be useless for saddle, and *vice versâ*.

TEETH as signs of age. A foal of 6 months old has 6 grinders in each jaw, 3 in each side, and also 6 nippers, or front teeth, with a cavity in each. At 1 year old the cavities in the front teeth begin to decrease, and he has 4 grinders on each side—one of the permanent and the remainder of the milk set. At 2 years old, he looses the first milk grinders above and below, and the front teeth have their cavities filled up just as horses of 8 years old. At 3 years old or $2\frac{1}{2}$, he casts his two front nippers, and in a short time after the 2 next fall. At 4 years old the grinders are 6 on each side (permanent set), and about $4\frac{1}{2}$ his nippers are permanent by the replacing of the remaining 2 corner teeth, which have dropped; the tushes then appear, and he is no longer a colt. At 5 years old, a horse has his tushes, and there is a black coloured cavity in the centre of all his lower nippers. The corner ones are thinner. At 6 years old, this black cavity is obliterated in the 2 front lower nippers. At 7 the cavities of the next 2 are filled up and the tushes blunted: at 8, that of the 2 corner teeth. The horse is now said to be aged. The cavities of the upper jaw are not obliterated till the horse is about 10 years old, after which time the tushes become round, and the nippers project and change their surface. (*Youat.*)

TO EXAMINE EYES. Place the horse in stable facing the entrance, and near the doorway. Put your face close to his cheek, under and behind the eye. Small faint whitish lines crossing the cornea, or spread over any part of it, indicate previous inflammation. Also a narrow ring or circle of haziness shows the same, but of older date.

Note the size of both pupils carefully before horse leaves stable; and as he comes out, observe whether both contract, and equally so, with the increase of light. If they do not, the eyesight is defective.

GOOD LEGS are essential. When standing still, the fore-legs should be quite perpendicular. An upright shoulder is bad for a riding horse, as it makes his action rough and limits his stride, but does not matter for draught. A long and muscular fore-arm denotes good action. The knees viewed from in front should be broader than the leg above and below, and they should taper off backwards. The bones beneath the knee should be broad and flat. Observe if shoes are unduly worn at the toe, as, if they be, it is a sign he does not step freely, and is liable to stumble.

GOOD FEET. The proper slope of the foot is 45 to 50 degrees. If more oblique, it signifies flat sole or pumiced foot. If too upright, it leads to contraction and thrush; moreover, the pastern, also being too perpendicular, causes unpleasant jolting paces. The rings of horn should be regular; if irregular and

close together, or if the hoof be sunken in, the horse has probably had chronic laminitis, which is liable to recur. White feet are most liable to disease.

VIOLENT TEMPER may be expected if the bones of the face from the eyes downwards are concave, or what is called deer shaped, specially with Arabs. Also of chestnut-coloured horses, because that colour only grows on thin skins easily irritated.

COLOUR is a matter of taste, but whatever it be, the extremities should be darker than the body is; a bay with dark points is usually preferred. White and grey are bad for officers as attracting the enemy's fire, and also the hairs come off on to the rider's clothes. Roans are generally hardy. It is a curious fact that no important race was ever won by a black horse. Arabs believe that a chestnut with white stocking on near (or left) fore-leg is very safe, whereas the stocking on the off fore would be just the reverse.

GENERAL OBSERVATIONS. A weight carrier must have a short back, short pasterns, and be what is called well ribbed home, *i.e.*, ribs reaching to within a short distance of the haunch bone. If muscles of tail be weak, so probably are those of the body. A curly mane shows a horse is not thoroughbred. If an Arab has a thick bushy tail and coarse rough hair on mane it is lowbred, though a thin tail does not prove the contrary, as it may have been caused artificially. Dishonest dealers can conceal broken wind by giving a little shot (as the gastric acid dissolves some of the lead, which then acts as a sedative to the gastric nerves), blow out the hollows above the eyes and mark the teeth of an old horse to reduce the signs of age, and play many tricks to deceive the inexperienced.

MARES do very well for district work, but are not suitable for Parade, as they make horses unsteady, if for no other reason. There is no fixed rule for their getting what is called "in use." Some are only so once or twice a year, others every fortnight throughout the spring, but the majority at intervals of two to three months. It is very unpleasant to drive or ride them when in that condition. Mares take 11 months for pregnancy, and should not be worked for the last three, and only slowly before that.

MARCHING A HORSE. After purchase, it may be necessary to send a horse under charge of a syce for a long journey by road; for instance, from Calcutta to Cuttack. If so, give the syce an open letter addressed to all officials along the route requesting that assistance may be rendered if required, adding that you will gladly repay any expenses thereby

incurred. Also let the syce, besides necessary money, have a sufficient number of post-cards addressed to yourself to post one at every Post Office he passes. If all is well, he need write nothing on them, as the post marks and dates will show his progress. If they suddenly cease, the last one will give a clue where to commence enquiries through the Police if necessary. Warn the syce that he will be prosecuted if he lets out your horse to "serve" village mares *en route*, as this is often done in travelling.

TO MAKE A NEW HORSE QUICKLY FOND OF YOU, scrape some shreds off its "thumbs" and rub them over its nose with the palm of the hand. The horse will whinny and eagerly follow you to get another sniff. The "thumbs" are the 4 large excrescences on the inner sides of the legs, 2 above the knees and 2 below the hocks, and are sometimes called the casters. Oil of Rhodium (*Convolvulus Scorparius*) rubbed on the nose will act in the same way, and in Australia Oil of Cumin (*Cuminum Cyminum*) is similarly used with colts.

This is a stable secret which it is believed has never before appeared in print. Take care that your hand is at the time free from the smell of tobacco or any other substance repugnant to horses.

WARRANTY usually is given as follows:—"Received rupees one thousand from Major C— for a bay Waler Gelding, height 15 hands, branded H on near fore-shoulder, warranted 6 years old, sound, free from vice, quiet to ride and drive."

RETURNABLE CAUSES. Stonehenge gives the following alphabetical list of diseases and injuries which entitle the purchaser to return a horse warranted sound:—

Bog spavin, if it interferes with the action of the joint.

Blood spavin, an aggravated form of bog spavin.

Breaking down.

Broken wind.

Cataract.

Corns unless very slight.

Cough, chronic.

Curbs of old standing.

Diseases of organic kind.

Farcy.

Grease.

Glanders.

Laminitis.

Mange.

Megrims, if an attack took place before the sale.

A nerved horse.

Ophthalmia prior to sale.

Ossification of lateral cartilages or adjacent structures to joints.

Pumiced foot.

Quidding.

Quitter.

Ringbones.

Sidebones.

Roaring and whistling.

Ruptures of all kinds.
 Spavin (bone).
 Stringhalt.
 Thick wind.

Thrush, if severe.
 Thickening of back sinews.
 „ suspensory liga-
 ment.

Returnable Vices.

Biting badly.
 Bolting.
 Kicking freely.
 Rearing.

Restiveness, or refusing to
 proceed when required.
 Shying, when a confirmed
 habit.
 Weaving in stable.

Not Returnable.

Broken knees, unless joint
 be injured.
 Capped hocks and elbows.
 Contracted feet.
 Crib biting.
 Curby hocks.

Cutting.
 Splint, unless it causes lame-
 ness.
 Thoroughpin.
 Thrush, if slight.
 Windgalls.

SELLING. When leaving your station for any period over three months, unless your horses accompany you or can be left in charge of a *reliable* friend, it is better to sell them off and buy afresh on return. Livery stable-keepers usually charge 25 to 30 rupees a month for taking charge of a horse, besides which there may be a long bill for medical attendance, or the animal *may* die, and is nearly certain to deteriorate from want of regular work. The best way to get a purchaser is by advertising in the newspaper. Always state your name, reason for selling, price you gave with date of your purchase, as well as price you require and description, as these details give confidence to purchasers. If possible, give V. S. certificate, and warrant free from vice and tricks without hesitation, if you consider it so and two competent persons concur in your opinion. Stable articles go with a horse sold in India otherwise than by auction as a matter of course. It is a fair plan to take off about 10 per cent. for each year from 6 to 10 years of age, and 15 to 20 after that. The next best plan is to send the horse to auction with a reserve price, the only other mode being without a reserve price. Auctioneer's fees vary from 5 to 10 per cent., which makes them legally responsible for realising the price.

A horse should not be described as a charger, unless a proper certificate to that effect from a Riding School is produced, even though he may be justly called an excellent Parade horse with all arms.

PART II.

HINTS FOR MOUNTED OFFICERS.

(Alphabetically arranged.)

NOTE.—*To Officers of British Cavalry, equalled by few and excelled by none in the world, the following remarks are superfluous. But they may be useful to Infantry Mounted Officers, especially young Staff Corps Subalterns, who suddenly find themselves mounted on duty without any preliminary instruction.*

ATTACK AND DEFENCE. If opposed to a Lancer, try to keep on his right side, so that he cannot use his left arm as a rest for his lance. But with a mounted swordsman, keep on his left, to lessen the reach of his sword-arm. Never halt to receive an attack; either advance or retire without hesitation. When in doubt, always charge, and as straight and hard as you can go, especially at Infantry, as it unsteadies their nerves, spoils their aim, and the mere concussion may knock them over. Always cut at a mounted man's horse and at a dismounted man's face or wrists, as cutting into the body is very fatiguing to the sword-arm, and often the sword sticks fast.

BITS. To prevent military bit getting thrown above the horse's nose, whereby rider loses all power over the horse, always use a lipstrap with the curb chain. Bits from England are too large for Indian horses, and many falls occur from this fault. The width of the bit should be exactly that of the mouth, and the width of the port must be equal to the space occupied by the tongue. The curb-chain, including two hooks, should in length equal once and-a-half the width of the mouth. The great secret of adjusting the bit properly is to see that the mouth-piece comes on that portion of the gums which is opposite the groove of the chin in which the curb lies flat.

CAVALRY EQUIPMENT. The following extract from the *Admiralty and Horse Guards Gazette* will interest many officers :—

The Kabul Committee on Equipment particularly recommended that every mounted officer and man should have on service a chin head-stall and chain reins, so that they cannot be cut through, and as cruppers and breastplates are only necessary with badly-shaped horses, they ought only to be allowed when the shape of the horse requires them. The English saddle is too heavy, and is not strong enough, as the front arch of the iron tree is apt to splay out with the weight of a heavy man and touch the horse's spine; but it is not too much to expect, with the perfection that has now been arrived at in the manufacture of steel, that a far lighter and stronger saddle will soon be forthcoming. The Cape girth is a superior one to ours, and our present surcingle is, perhaps, too wide for its purpose. The present system in England is to have the panels of the saddle with a serge lining, and to stuff them with horsehair. There is no objection to this as long as the present numnah is used, which to a great extent protects and preserves the serge from wear and tear. But the weight of the numnah can be saved by following the plan in universal use in Australia—the country of horses—which is to have the lining of soft pliable leather, and to stuff it with strips of felt cut to the shape of the panel; the panel is so made that a lacing opens, and the stuffing can be introduced or reduced by adding or withdrawing strips of felt. This can be done for both Cavalry and pack-saddles, and the importance of this system can hardly be exaggerated when it is pointed out that any man can stuff his saddle by this means to suit the ever-altering condition of his horse or pack animals on service, while with the present system it requires trained men to do so. Nothing on service is so common or so productive of sore backs as ill-fitting saddles, which can hardly be helped from the rapidity with which the animals change condition. The usual fault is, that too much weight is carried behind the saddle, and thus the valise should be abolished for Cavalry, and the article carried in a kit-bag instead. The question of carrying the kit of all arms on wheeled or pack transport applies equally well to Cavalry. As the weight carried by Cavalry horses should be reduced as much as possible, nothing should be carried on the horse which is not in constant and immediate demand. Such things are a horse-brush, a cloth rubber, and an oil tin only, for which ample room is to be found in the wallets. On service all animals suffer from sickness if over-groomed, or if groomed as much as in peace time, when they are picketed out in the open. The articles named are ample to keep the horse and

saddlery clean, and to maintain a healthy action of the skin. A horse blanket, mess-tin, great-coat, and a light waterproof sheet, with the line gear, must be carried on the saddle; the blanket can be used as a numnah, but it is difficult to fold in the dark or in windy weather. If carelessly or unevenly folded, it will cause a sore back, and it has a tendency to slip off behind from under the saddle. Hence, when possible, it is advisable not to use a large blanket as a numnah. It can be carried behind the saddle rolled up with the line gear and the man's waterproof sheet. A shoe-case and a canvas nosebag with a feed of grain (tightly tied up in it to prevent shaking, together with a day's ration for the man taken in the mess-tin and haversack), must also be carried. If the wallets have covers, a sheep skin is useless, and only adds to the weight; the great-coat would be carried over the wallets. With regard to the line gear that has to be carried on each horse, the report of the Kabul Committee gives valuable information. On service the watering bridle and bridoon are unnecessary, the head-stall, which each horse carries on his bridle, being sufficient for all purposes. In Afghanistan the system of fore-shackling was found to be far superior to picketing by the head, which constantly breaks the head-collar, requires a larger amount of rope, and is not so secure a method as tying a horse by a shackle to a fore foot. But it is necessary to train horses in peace time to the use of such shackles, if they are to be used in war.

COLOUR. White or grey horses are bad for officers, being liable to draw the enemy's fire. They are also subject to melanosis. A bay with black points is best.

COMPENSATION for chargers is payable by Government under certain rules, contained in paras. 607 to 611 of Pay Code for India, Vol. I, printed at full length at the end of this chapter for easy reference. But the horse must have been entered, with its price, in Regimental or Station Records; so don't forget to do this at time of purchase, or subsequent claim may be thereby vitiated.

HOBBLES are very useful in camp, to prevent horse being stampeded or lost, also when rider is dismounted under fire to prevent bolting, and during temporary halts. Two strong padded dog-collars (connected by 12-inch chain) fastened on fore fetlocks is best for military man. Elaborate drawings and description of hobbles and picketing chains are given in clause 217, India Army Circular of November, 1882.

LYING DOWN is taught to horses in the X Royal Hussars and other Cavalry Regiments, and will save many lives whilst

their riders are under fire on foot. The horse must first be thrown repeatedly as described in the chapter on Remedies, until at last he will lie down on the signal being given by touching him behind the knee.

RIDING. In turning smartly and quickly, as in taking up points on Parade, it is important that the horse has the correct leg leading to prevent his falling. Remember that to make him lead with the *right* leg in cantering, it is necessary to pull *left* rein and touch with the *left* heel, and *vice versé*. Catching hold of one ear makes a horse trot. If a horse begins kicking inside an Infantry Square, instantly hold or tie up one fore-leg, which stops him. Before riding through a stream cross the stirrup leathers over the saddle, and shorten the reins by tying a knot to prevent their getting mixed with his legs if he slips and falls.

SPARE SHOE. Carry ‘Percival’s Leather Sandal’ (price 10s. 6d. at English saddler’s), which can be fastened on in two minutes by anyone, instead of spare shoe on saddle, as probably, on an emergency, no farrier can be found to put on the shoe.

STEEL CHAINS should be fastened on the bit (and not, as usual, on the head-collar) if there is any chance of meeting the enemy, in case of leather reins being severed by sword-cut. At the same time it will be as well to transfer the revolver, if it is in the saddle holster, to the belt.

SWORD. Never hook up sword when mounted, as the hilt must smash your ribs, if you fall from a wound or accident to yourself or horse. Never draw sword between body and left arm; it looks bad, and is also dangerous; always draw and return outside left arm. When galloping with sword returned (*i.e.*, in scabbard), slip end of sword-knot under waist-belt to prevent it banging the horse, or use a loop of leather.

VETERINARY ATTENDANCE and the supply of medicines for the *bonâ fide* chargers of all officers of the staff of regiments of British Infantry, of Native Cavalry and Infantry, and of officers doing general duty, who may wish to avail themselves of the services of veterinary surgeons, are authorised. Officers so employing veterinary surgeons are required to pay Rs. 24 per horse per annum, or Rs. 2 per mensem for broken periods; three-fourths of these sums being for attendance, and one-fourth for Government medicines.

When an officer or veterinary surgeon leaves a station, payment is to be made to the date of departure; but, except in the case of removal, any officer availing himself of the services of a veteri-

nary surgeon for however short a period, must pay Rs. 18 for each horse attended: this payment entitles him to veterinary attendance for nine months. (See G. O. 401 of 1875.)

Loss of Horses.

Para. 607. Indemnification for horses lost in action or destroyed in consequence of being infectiously diseased, is only admissible to an officer in receipt of horse allowance, either as a distinct allowance, or as an item in his pay, or in any established allowance he draws; and to an officer who does not receive horse allowance, when employed on mounted duty in the field in any of the following positions:—

- (a) A Royal Artillery Officer attached to a heavy battery.
- (b) An Infantry Officer below the rank of Field Officer when performing the duties of that grade in room of an absent Field Officer.
- (c) An Officer acting as orderly officer to an Officer commanding a Division or Brigade, who is allowed to appoint two such.

608. An Officer of Horse Artillery, Horse Field Battery, or Cavalry, is allowed for the loss of a charger selected from the remounts of his corps, indemnification equal to the price he would receive on returning such charger to the ranks.

609. A Mounted Officer is allowed indemnification for the loss of a charger not selected from the ranks, equal to the residue of the price paid for the horse after deduction of 10 per cent. per annum, provided the residue does not exceed Rs. 800, which is the maximum allowed in any case.

610. An Officer who can claim indemnification for the loss of a horse under Article 607, is required to register in the Station or Regimental Records the price he pays for his charger; when a horse has come into the possession of an officer otherwise than for a money-payment, a value is to be assigned by a committee to be assembled by the Commanding Officer of the Station, which value is to be recorded as its price.

611. Indemnification for horses of officers destroyed on account of farcy or glanders will only be admitted when the horse has been destroyed on the authority of a Special Committee, attended, if possible, by a Veterinary Surgeon. (*Army Regulations, India, Vol. I.*)

PART III.

HOW TO DISTINGUISH SIGNS OF HEALTH OR DISEASE.

To judge of a horse's health, inspect his dung, urine, look inside his nostrils, feel the pulse, ears, legs, and skin, besides any local inspection specially necessary, and use a clinical thermometer.

DUNG when loose and sticky, with mucus on it, shows digestion is deranged, probably from too much heating food, such as gram. If yellow and clay-like, the liver is slightly deranged. If hard, small, dark reddish colour, and often surrounded with mucus, the liver is inflamed. If dark and stinking, probably diabetes is the cause. If green, instead of natural colour, it shows grass unduly predominates in food. If dry and hard, it denotes costiveness and want of green or soft food. If it contain undigested oats, barley, &c., it shows that the grain should be bruised before feeding to assist mastication, or the food should be changed.

URINE is sometimes bloody from inflammation of the kidneys, but often is only apparently so from feeding on soft boiled food, such as mutikalai; by leaving the urine for an hour in a receptacle undisturbed, the difference can be perceived, as real blood will separate from the urine. Profuse flow of watery urine indicates diabetes; suppression shows strangury, whilst constant painful dribbling accompanies inflammation of the bladder. All these diseases and treatment are separately mentioned under the heading of Internal Diseases.

NOSTRILS in health have the membrane a uniform pale pink colour. Increased redness shows some internal excitement of system. Streaked appearance means inflammation, and florid red denotes acute inflammation internally. Pale pink with patches of red shows fever. Paleness accompanies debility. Dark livid or purple is very bad, being significant of stagnation of vital current (as in congestion of lungs). Yellow tint denotes that liver is out of order.

NASAL DISCHARGE (which every horse naturally has) in health is ropy, floats if put in water, and when mixed with it is

still stringy. If it becomes thick and creamy, sinks in water, and can be thoroughly mixed with it, there is disease of some sort undoubtedly, so observe for other symptoms to identify the disease.

PULSE can be soon discovered by placing two fore-fingers under middle of jowl or cheek-bone on left side, and moving them about until pulse is found. In health it averages 36 beats a minute *when at rest*,—the smaller the horse the quicker the pulse. 55 beats denotes fever, 75 is very bad, and when at 100 per minute, the animal cannot survive long. In debility pulse is hardly perceptible.

USE OF THERMOMETER. A small clinical one, such as doctors place under a human being's tongue, may be used with horses by inserting its bulb for four consecutive minutes into the rectum (*i.e.*, up under the tail). In health it will always mark precisely the same number of degrees in all seasons and climates, probably $99\frac{1}{2}^{\circ}$. First, when in health, ascertain by three or four trials what your horse's average temperature is; then, if any internal inflammation be suspected, thermometer will conclusively indicate by its increased number of degrees, if such be the case or not.

PART IV.

LAMENESS.

THIS is not a special disease, but a sign of some disease or injury. The cause may be palpable, such as a kick or violent blow, but it is often very difficult to know the origin or even the exact site where it lies. If remedies, however good, be applied for the wrong disease or to the wrong place, they evidently can be of no benefit and may cause harm; so, if possible, professional assistance should be obtained. But frequently in India it is not available, and then a careful consideration of the following remarks may enable the reader to identify the actual disease or injury.

The shoe of a lame limb should always be removed, as it may conceal some injury besides any other ostensible cause of lameness. This must be done carefully, one nail at a time, and if any of them comes out wet, it shows something is wrong in that spot.

As symptoms are in some cases more marked when an animal is at rest than when in motion, he should first be scrutinized in the stable; the best time being the early morning after a long night's rest.

POINTING one foot persistently in advance of the corresponding one whilst at rest denotes acute pain in the leg pointed. If pointing be from fatigue or habit, and not from pain, it is always of two limbs simultaneously; for example, if the right fore-leg is pointed, the left hind one will also be stuck forward. Most animals rest themselves, while standing still, in this manner. If both fore-feet are bad, the hind legs will be brought well forward under the body, whilst the fore-feet are frequently shifted with simultaneous stretching of the neck and throwing up of the head from the pain caused. If both hind legs be affected, the horse is stiff as well as lame, and at rest he stands with the fore-feet below his belly, body pushed forward, and head hanging down to throw weight away from the legs that are in pain; he also shifts the hind legs alternately and breathes heavily from the pain. His efforts to stretch his legs when he wishes to urinate cause such agony as sometimes to render the attempt futile.

FOOT LAMENESS is most easily recognized when the animal is at rest. The pastern of the leg affected is generally more upright than the other to avoid throwing weight on it. The hoof always feels hot when there is pain inside it, if the palm of the hand be placed flat on it.

SHOULDER LAMENESS is shown by the forearm being inclined *backwards*, knee bent, with the toe only resting on the ground. In this case a high-heeled shoe gives relief. Shoulder lameness occasionally is caused by liver disease, but then it occurs on the right side only, and is accompanied by loss of appetite and yellowness of the gums and nostrils. In cases of shoulder lameness, the horse, if moved in his stall, tries to avoid elevating the shoulder, and therefore in turning swings the leg round in a conspicuous manner. Pressure on the muscles between the fore-leg affected and the chest makes the animal wince.

ELBOW LAMENESS is easily distinguished from shoulder lameness by the horse being able to bring his shoulder well forward, though, whilst at rest, he keeps the injured leg pendulous with the toe dragging and probably behind the corresponding leg.

Having failed to detect the seat of lameness whilst the animal is in the stable, the next plan is try to do so in motion. For this the slow trot is the best pace, and it should be commenced immediately on leaving the stable, as walking may cause the symptoms to (temporarily) disappear. The snaffle bridle only to be used, the reins over the horse's head being held about two feet from the horse's mouth by a man running alongside. If the reins be held nearer, the nodding of the head whilst trotting might be imperceptible; and it longer, the man might be kicked by the horse.

Everyone knows that a horse lame in a fore-leg bobs his head up and down at a walk and trot; but it is not equally well known that he does this as the sound foot touches the ground to throw on it the weight of the neck and head, which is considerable.

Don't form an opinion until the horse has been trotted *towards* as well as *from* you, and turned sharply both to the right and left, as in cases of what is called cross lameness, a mistake would probably be made. For instance, a horse lame in the off fore-leg trotted *from* you would appear to drop his near hind quarter as if lame in that leg, though, on his trotting towards you, it would be evident that the hind quarter did not really drop, but only appeared to do so from the head bobbing up and down.

In obscure cases, exercise smartly for half an hour, then put the horse in the stall till quite cool, after which the slow trotting above described can be commenced.

If a horse be lame in a fore-leg and shows this more on soft than on hard ground, the cause is probably a sprain. If, on the contrary, he goes worse on hard than on soft ground, the cause most likely is some bone disease (splint, ringbone, &c.).

SPLINTS are bony excrescences only found on the fore-legs below the knees, and unless close to the joint they do not interfere with the action at all; sometimes they cause lameness at the trot, though not perceptibly so at a walk. In searching for them by rubbing the fingers down from the knee to the fetlock, always have the opposite leg held up, thereby causing extra weight to be thrown on the other, when any inequalities about the bones will be more easily detected.

In lameness of the hind quarters, the hock is the most likely seat of disease and the hip of that leg is carried somewhat higher than that of the sound side when the lameness arises in the hock or below it. But if the cause be anywhere above the hock, the hip on that side droops, and in watching the horse from behind, it will be observed that his body seems to swerve away from that side.

SPAVIN, being an excrescence peculiar to the hocks, interferes with the proper action of that joint, causing the hind leg to be somewhat dragged instead of lifted; this is clearly shown in a week or so by the unusual wear of the shoe at the toe when the disease commences. In slight cases, an occasional tripping of the toe and a kind of vibration in the hock as the toe comes on the ground, with some stiffness of the hock, are the earliest symptoms. As these lessen after a little exercise, let the animal rest till quite cool, then test him again, especially in turning and trotting, when the symptoms will again appear. In confirmed cases, the horse keeps the leg flexed whenever he can. In suspected cases of spavin, first stoop down in front of the horse looking between his fore-legs to compare the two hocks which ought to be of the same size, and see if there be any enlargement on the inside of either of them; next look from behind the horse for enlargements on the hinder part of the inner side; lastly, take side views (from both sides) to detect enlargements on the front of the hock. If there be a swelling, and it is doubtful whether it is spavin or the result of a kick or other temporary injury, it is easy to decide the point by feeling it, as a spavin, being composed of bone, is hard, whilst the other sort of swelling would be soft. The difference between bog and bone spavins is given in the Table of Diseases.

When examining a horse for sprain of the loins and for stringhalt, he must be backed and turned sharply, as the defect may not be apparent when he is moving straight ahead.

STRAINS of the sinews of the leg are very common. In looking at anyone of a sound horse's legs from the side, three straight lines are seen between the knee and the fetlock; the middle line is the suspensory ligament, which is not elastic as the sinew down the back of each leg is.

If a horse raises his leg freely, but evinces pain as it touches the ground, the suspensory ligament is probably injured. To detect the exact spot injured, have the opposite leg held up (as for splints) to brace the tendons, and then pass the thumb and forefinger down the suspensory ligaments and back sinews to feel for any swelling. Directly it is touched the horse will unmistakably show signs of pain, and on the other leg being released will take the weights off the injured leg as quickly as possible.

When the sheath of a tendon, and not the tendon itself, is injured, the swelling is puffy, and on pressing it with the finger the tendon can be clearly felt through it. Also the horse, though lame at first, will go less tender after a little exercise, whereas if the tendon itself were injured the lameness would increase. In all cases of strain or sprain *rest* is the most essential agent towards cure.

RHEUMATISM will also cause sudden and complete lameness with local swellings, hot and tender. It is, however, easily distinguishable, as the swellings shift from spot to spot and even from one leg to the other, which could not possibly happen in the case of swellings from local injuries.

TREATMENT for all bony excrescences, such as splint, spavin, curb ringbone, &c., requires professional knowledge; so a horse suffering from any of them should be sent for three months or so to a veterinary surgeon. But if this be impracticable, buy a pot of Cole's Patent Ossiline, which cured Paradox, winner of the Guineas and Grand Prix in 1885 (price 10s. 6d. in England), and apply it sedulously according to the printed instructions which accompany it. Other causes of lameness may be successfully treated without sending the animal away, as shown further on in this book under the various Diseases and Injuries.

PREVENTION OF LAMENESS is best effected by leaving a horse unshod. In India few horses, except those in hard work on macadamized roads, really require to be shod, and half the cases of lameness probably are either caused or aggravated by defective shoeing. Of course, if a horse has always been accustomed to have shoes he cannot suddenly dispense with them. But if they be removed, and for two months or so the horse only get walking exercise until by the downward growth of new hoof all *the upper nail marks have entirely disappeared*, he will probably work more satisfactorily for the rest of his life than he ever did before, and

his master will be saved the expense and worry of the native farrier, as nature will do all that is required in the way of paring.

ARTIFICIAL LAMENESS can be temporarily caused by a piece of fine silken, or whip, cord being tightly tied round the foot above the hoof where the hair conceals it. This might be done by a lazy groom not wishing the horse to be used, or one who wishes to gain subsequent credit for curing an imaginary ailment. The cord can be felt by the finger nail being drawn upwards from the hoof, and directly it is removed the lameness disappears.

CONCEALMENT OF LAMENESS is effected by dishonest dealers in various manners. For instance, the wily Afghan by making an animal afflicted with laminitis stand on hot iron plates causes the symptoms to disappear temporarily. The English horse chaunter places a small piece of iron tightly under the shoe of a sound forefoot, if a horse is lame in one fore-leg, to equalise the action of both fore-legs and thereby conceal the lameness. This is technically described as "beaning." There are many other tricks equally known in Europe and in Asia.

PART

EXTERNAL AND

Note for guidance.—When a horse is ill, but the nature of his complaint is not known, search the column headed Symptoms until those pertaining to the case are recognized. Then the name

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|--|
| <p>SKIN—</p> <p>HIDE BOUND, from bad keep or deranged stomach, or result of long illness.</p> <p>SURFEIT or SCAB, from bad keep, chill or foul feeding.</p> <p>PRURIGO, from exposure to sun and rain. Common in hot season.</p> <p>RINGWORM, from heat of weather, or constitutional.</p> <p>MANGE and LICE, from filth or contagion and ticks.</p> <p><i>Note.</i>—As this is highly contagious, the horse must be at once isolated from others, his clothing be boiled, and all his gear and stable-fittings disinfected with carbolic acid or chloride of lime.</p> | <p>Skin firm and immovable on body.</p> <p>Coat stares ; skin is itchy, with pimples or scabs on it.</p> <p>Skin itchy, but not dry and scabby. Hair comes off in patches.</p> <p>Round patches, each 1 to 2 inches wide, of eruption, with much debility.</p> <p>Skin thick, wrinkled, rough, and scabby; hair comes off freely. Horse constantly rubbing against wall or bars, and scratching with hind leg. Temper irritable.</p> |

V.

LOCAL DISEASES.

and probable cause of the disease will be seen at a glance on the left side and the treatment on the right. Technical terms, such as hock, pastern, stifle, &c., are explained in the Glossary, page 78.

Treatment.

Good grooming and diet, and steady but not severe exercise.

Bran-mashes for supper, and green food (carrots, lucerne, or guineagrass, &c.) daily in small quantities. Warm clothing. Stable well ventilated. If costive, give aloe-ball as described in "Remedies." An alterative, consisting of two parts of sulphur, two parts nitre and one part black antimony, may be safely given mixed in the food for ten days.

Same as above, but currycomb must not be used till scabs have gone ; a wisp of hay will do instead.

Apply a little ghee or olive oil to keep skin moist, and give cooling food ; or wash the part with sulphuric acid, mixed with ten times the quantity of water.

Apply kerosine oil externally, as for mange. Change of air very beneficial. Feed well, and mix 1 ounce powdered chiretta twice a day with the food, as an agreeable tonic.

Rub skin with good kerosine or petroleum oil, and dry by exposure to sun, once a day for 21 days. Bran-mashes and cooling food. If costive, give an aperient. Put two drachms nitre daily in drinking-water for a week.

If kerosine not available, wash with half ounce chloride of lime in pint of water, or mild solution of carbolic acid. If any ticks are seen, cut them off with sharp scissors, don't pull them off.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|---|
| SKIN—(Contd.) | |
| <p>FARCY, from bad stabling or contagion.</p> <p><i>Note.</i>—As this is very contagious, the precautions for manage are indispensable on the first suspicion of this disease.</p> | <p>Knotty tumours, hard and hot, called “buds,” on body, especially head and inside thighs, in groups, which break and leave small sores. Sometimes one leg swells suddenly and enormously, besides the buds.</p> |
| <p>BURSAUTEE, peculiar to India, and only during rainy season.</p> <p><i>Note.</i>—Opinions of experts vary diametrically both as to positive cause and best treatment.</p> | <p>Chancre-like persistent sores, with hard kernel, commencing usually on belly and legs.</p> |
| <p>MELANOSIS, peculiar to aged white horses only.</p> | <p>Unsightly lumps on rump and along root of mane.</p> |
| <p>ULCERS, from violent bruise or neglected wound.</p> | <p>Ill-looking sore with sanious discharge.</p> |
| <p>ABSCESS, from external injury, or arising from bad state of the blood.</p> | <p>Painful swellings, which gradually work their way to the skin, become full of matter, the fluctuation of which can be felt by the finger, and ultimately burst if left alone.</p> |
| <p>ANASARCA, from constitutional derangement; often from previous illness.</p> | <p>Puffy swellings on belly, sheath and breast. Legs also swollen.</p> |
| LEGS— | |
| <p>SWELLED LEGS (Lymphangitis), from hard work and debility, or from no work and want of exercise.</p> | <p>Swelling, usually of one hind leg only, goes <i>downwards</i>; generally preceded by loss of appetite and fever fit.</p> |
| <p>PALSY, PARALYSIS, from severe strain of back or loins.</p> | <p>Loss of feeling and peculiar dragging motion of hind legs.</p> |

Treatment.

Destroy the animal and all his gear if professional assistance is not procurable. Disinfect the stables thoroughly, and watch other horses for symptoms of the same complaint. As preventive, give two ounces of hyposulphate of soda with each meal for two or three months.

Change of air to hill station is a specific cure. Apply marigold ointment, or carbolic acid, or solution of bluestone externally, and give laxative food, followed by tonics. But treatment which may quite cure two horses will perhaps entirely fail with a third in same stable. Don't buy a horse which you know by the marks has before had the disease.

Incurable. But horse may go on working steadily for years after lumps have appeared.

Apply solution of 1 part chloride of soda with 24 of water: or chloride of zinc by day, and marigold ointment at night. Be careful to keep flies off.

Acute abscess requires warm fomentations and poultices to bring on the formation of matter, and then to be lanced to get rid of the matter. Don't ram tow into the hole, but simply wash it clean and apply weak solution of carbolic acid. If the abscess be near a joint, instead of lancing, allow it to burst of its own accord.

Steady exercise morning and evening. Change of air if possible. Laxative food, followed by tonics.

Don't blister or fire, but hand-rub and apply warm fomentations and flannel bandages. Attend to diet, and exercise gently. If from debility, give tonics.

Incurable.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|--|
| LEGS—(Contd.) | |
| SHOULDER SPRAIN , from slip or fall, or severe strain. | Limb moved outwards with circular motion, dragging the toe. No pain or heat in foot or lower part of leg. |
| STRAINS , from mechanical injury or overstretching of muscles or fibres of back, shoulder, fetlock, &c. | General symptoms are local heat, swelling and pain on pressure or movement of the part affected. If in strain of the back there is palsy of the hind legs, the case cannot be cured. |
| STRAIN of suspensory ligaments, which run down each side of the legs from hard work, specially galloping. <i>Note.</i> —These ligaments are not elastic like the back sinews. | Local swelling and tenderness, leg usually is kept bent, with toe only touching the ground. The animal limps if trotted. |
| STRAIN of the back sinews or of the sheath covering them. | Same as above, but the fetlock will probably be bent forward more than it was before. Trotting will apparently lessen the lameness temporarily. |
| BREAK DOWN from severe exertion causing a rupture of some sinews. | Partial or entire giving way of the fetlock joint downwards, so that the back of it nearly touches the ground. The horse can only move on the other three legs. |
| * STRINGHALT , from nervous irritation, exposure to cold and wet. | Peculiar catching up of hind leg. |
| SPLINTS (fore-legs only), from hard work when young or a violent blow. | Bony excrescence on cannon-bone below knee. |
| CALLOUS TENDONS and CHRONIC STRAINS , from hard work or old strains. | Swelling or thickening of the back sinews. |

* In Australia, specially about Gipp's Land, the author was told that string-

Treatment.

Sling the horse: foment with hot water for hours, then dry and rub in kerosine oil as blister for two consecutive days. Or pour jets of cold water from a height on the shoulder four times a day, 15 minutes each time. Keep bowels open.

General treatment consists of an embrocation of equal parts of laudanum, olive oil, spirit of turpentine and hartshorn applied after the first active inflammation has subsided. Complete rest is essential to recovery.

Dip the leg every hour in a bucket of cold water, instead of bandaging it until swelling has subsided. Keep in loose stall for three or four months, and then only give walking exercise for another three months, when a cure may perhaps be effected.

Apply cold water bandages of chamois leather for a fortnight, put on high-heeled shoe, give cooling diet and mild aperients. When heat and tenderness have gone blister the spot affected.

No cure.

Incurable; but often does not prevent horse doing ordinary work well.

Leave them alone, unless lameness is caused; in that case poultice and blister, or use ossiline. See "PRESCRIPTIONS"

Firing best, blistering next best. If hot and tender, apply hot fomentations, followed by cold water jets, as for shoulder sprain.

halt is attributed to the fact of horses eating dandelions in the green pasture

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|--|---|
| LEGS—(Concl'd.) | |
| MALLENDERS and SAL- LENDERS, from bad grooming and want of exercise. | Scurfy eruption behind knee and inside hock. |
| CRACKED HEELS, or CHAPPED HEELS, from damp feet; usually groom's carelessness in not drying them. | Cracks of skin on back of pastern, with watery dis- charge, which sometimes smells nasty. |
| GREASE, generally groom's fault as above, but occa- sionally it is constitutional. White heels most liable to this. | Cracked heels in aggravated form with fœtid discharge. Local swelling, with moist and greasy skin. |
| GRAPES, from neglected grease. | Red excrescences in bunches. |
| MUD FEVER, from wash- ing legs and not drying them thoroughly. | Inflammation of skin of legs, and sometimes of the belly, similar to cracked heels, with slight fever. |
| WINDGALLS, from hard work, or strains. | Puffed <i>soft</i> swellings near fetlock joint. |
| RINGBONE, from hard work, strains, or high action. | Lameness; small hard lumps, sometimes a hard ring, just above hoof. It differs from laminitis by the ab- sence of paint at toe and of fever, also the lower part of the foot is <i>not</i> hot. |
| CROWNSCAB, or VILLI- TIS, from foul habit, want of exercise, or gallop on hard ground. | A scab and discharge from the coronet (just above hoof). |
| HOCKS— | |
| SPAVIN, from concussion, sprain, hard work, being ridden on haunches. Some- times hereditary. | <i>Hard</i> , bony enlargement be- low inner side of hock (the lower it is the less injuri- ous it will be). Drags toe. Hock and foot stiff, speci- ally at starting. |

Treatment.

Clean with soap and warm water, dry thoroughly, then apply marigold ointment or chloride of zinc lotion.

If slight, apply marigold ointment. If inflamed, first apply carrot and charcoal poultice (*see* "REMEDIES"), followed by chloride of zinc ointment, or apply a mixture of one part of Goulard's Extract and four parts glycerine cream or oil. Preventive is fresh butter or glycerine rubbed on heel half an hour before exercise.

Treat as above for bad cracked heels. The poultices must be continued till all inflammation has gone.

Also give mild tonic internally.

Must be cut off, but the amateur should not attempt the operation.

Same treatment as for cracked heels. Preventive,—never wash legs, but clean by brushing and rubbing only.

Cold water and vinegar bandages probably sufficient. If very bad, mild blister.

Warm fomentations to relieve the pain, and rest. Firing the only real cure. *See* Ossiline in "PRESCRIPTIONS."

Remove shoe; hot fomentations, and carrot poultice till all heat has gone. Then rub cantharides ointment and lard mixed on coronet.

Incurable after horse is 6 years old. Firing is best, but professional assistance essential. Horses with old spavins often work steadily and well.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|--|--|
| HOCKS —(Contd.) | |
| RHEUMATIC LAMENESS, the result of rheumatism. | Stiffness of hock-joint, and crackling sound can be heard if it be moved by hand after several hours' rest. |
| BOG SPAVIN, a distension of synovial membrane from hard work. | <i>Soft</i> enlargement on inner side of hock, but higher and more to the front than bone spavin. |
| CAPPED HOCK, from kicking against bars, or from lying on rounded stones. | <i>Soft</i> tumour exactly on the point of the hock. |
| THOROUGHPIN, from strain or hard work. | Two small lumps opposite each other on hind leg above hock. If one be pressed by finger, the other projects. |
| CURB, from sprain, hard work, or kicking. | <i>Hard</i> , bony lump on back of leg, 4 or 5 inches below point of hock, easily perceptible when leg is looked at sideways. |
| STRAIN of the hock. | Local heat and lameness without spavin or curb to account for it. |
| FEET (inside diseases). | |
| COFFIN-JOINT STRAIN, from violent exertion, sudden slip, or wrench. | Very sudden lameness, which is worse at trot than when walking. Heat and tenderness soon become perceptible just above hoof. |
| NAVICULAR DISEASE, in fore-feet only, from concussion or galloping on hard road. | Slight lameness and stumbling, especially at first starting. No external signs. Steps short and digs toe in ground. In stable he "points" toe by raising heel and arching the leg. |

Treatment.

No perfect cure. Rub in any embrocation and give steady exercise.

Note.—Never give beer or stout to a rheumatic horse.

No perfect cure. Warm fomentations till heat has gone, if there be any. Then treat as for windgalls.

Same treatment as for bog spavin. Constant hand-rubbing and a very mild blister of biniodide of mercury, or a constant application of ossiline or of tincture of iodine if persevered with from the first symptoms, will often effect a cure.

Leave them alone unless very tender, in that case treat as for bog spavin.

Put on high-heel shoe; if any heat, warm fomentations till it is gone, then blister, and two complete months' rest required. If it is old horse may work fairly without treatment. *See* Ossiline.

Treat as for strain of back sinews.

Hot fomentations and poultices till heat has gone. Then cold bandages and jets of cold water, or stand in running water three times a day. If still lame, blister, and two months' rest requisite.

No real cure, but a Veterinary Surgeon can cut the nerve (called neurotomy) to stop the pain and enable horse to go pretty well in harness.

To relieve pain, take off shoe and poultice foot, or let it stand in a puddle of wet clay.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|--|--|
| FEET (inside diseases). — (<i>Contd.</i>) | |
| LAMINITIS , or FEVER OF THE FEET , from severe work, wet feet, and want of exercise; or following inflammation of the chest (see COLIC). | Usually in fore-feet only. Hoof and foot hot; feverish symptoms; fore-legs stuck out, resting on heels. Constant shifting of feet. If pushed back, horse winces, elevates toe, and throws weight on heels. |
| CHRONIC LAMINITIS , from acute attack not being properly treated. | Steps very short, with knee straight. Foot affected, has hoof sunk in, and irregular but close rings of horn, and sole flat. |
| FEET (outer or visible diseases). | |
| SLOUGHING FOOT , the consequence of very bad laminitis. | The coffin (inner foot) bone is seen projecting through the sole or hoof sloughs off. |
| SEEDY TOE , often follows laminitis. | On removing shoe, a crack is seen between hoof and sole, often filled with soft bad horn. |
| PUMICED FEET , from laminitis, or natural defect. | Sole is flat, or even convex, instead of concave. |
| SANDCRACK , from brittleness of hoof and hard trotting or concussion. | A crack <i>down</i> the hoof, usually on inner side, and quite sudden. |
| CONTRACTION , from bad shoeing cutting away bars on sole, or natural deformity. | Foot too oblong, and heels closed together. A hollow at quarters (<i>i.e.</i> , side of hoof) is a very bad symptom. |

Treatment.

If possible, sling the horse. Warm fomentation and poultices to foot for six days. Remove shoe very gently. Laxative food. If very bad, bleed from toe. When better, shoe with leather and give walking exercise on *soft* ground for two months. Tincture of aconite in small but repeated doses may be given at first as a febrifuge.

Let foot rest in puddle of mud and water for several hours a day. Shoe with leather and get frog pressure. Apply coronet ointment. Don't expect perfect cure. Any hard work will bring on lameness.

Incurable. Better destroy the horse.

Pare away the hoof till no crack is left, after soaking it in warm water. Apply carbolic acid first, and then hoplemuroma steadily. Shoe with flat plate turned up at toe. Rub on coronet ointment. Don't work the horse violently.

No cure. Use bar-shoe or one with a broad web. Horse may go on working steadily for years.

Clean crack with sponge, dry thoroughly. With file or hot iron make small nick below (and above also if possible) the crack to stop it. Rub in hoplemuroma, bind hoof tightly with cord or tape, or an artificial clasp, if one can be obtained. Apply coronet ointment to accelerate fresh horn. Work must be light, but rest is best.

Watch shoeing carefully. Sole to be thinned, heels lowered. Shoe must fit properly, with only 2 or even 1 nail on inner side and 3 on outer side. Bars and frog must *not* be cut away. Shoeing with tips only (to be removed and replaced twice as often as ordinary shoes) for a few months is desirable.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|--|--|
| FEET (outer or visible diseases).—(<i>Contd.</i>) | |
| THRUSH, from contraction, want of exercise, wet feet, and neglect. | Slight lameness and tenderness when exercised. Deep cleft in frog, which has foetid smell and emits slight discharge. |
| CANKER, from neglected thrush or severe bruise, or constitutional. | Pale fungus growth on bottom of foot, and thin foetid discharge. Severe lameness. |
| CORNS, from bad shoeing or injury from a pebble or concussion. | Lameness. Reddish spot on sole in the angle between bars and outer wall of hoof. Horse flinches when the spot is pressed. |
| QUITTOR, from any wound in foot or severe bruise. | Lameness. Foot hot and tender. Small hard tumour just above hoof, pipes (or sinuses) in foot will be found by probing. If the pipes run <i>down</i> instead of <i>backwards</i> it is very bad sign. |
| PENIS— | |
| EXCORIATED SHEATH, from not being cleaned regularly. | Tender swelling of sheath, slightly offensive smell, and sometimes acrid discharge. |
| ULCERS on the yard from dirt or constitutional causes. | When the yard is out preparatory to passing urine, the sores can be seen. |
| ANY PART— | |
| MAGGOTS in any neglected sore, often in foot. | Little maggots suddenly make their appearance. |

Treatment.

Cut away loose horn, insert hoplemuroma or tar, with plug of hemp. If very bad, first poultice. Keep foot dry and clean, let frog grow, and use bar-shoe for a month.

Try poultice to soften horn, then cut away all diseased part, and apply strongest solution of carbolic acid or blue vitriol, sole being covered with hard pad. Don't expect a good cure.

Remove shoe, poultice, then pare away corn gently, and apply hoplemuroma or chloride of zinc. Use a bar-shoe for two months, with cavity opposite the corn.

Very wearisome, three months at least. Send to Veterinary Surgeon if possible. Remove shoe, poultice all over foot, open sole to let out matter. Squirt in carbolic acid. Blister sole. When wound looks healthy, use hoplemuroma or turpentine ointment, and get sole pressure.

Squirt warm water and soapsuds (or use sponge if not too tender) several times a day. Afterwards keep it clean as a preventive.

If slight, treat with marigold ointment. If very bad and sloughing, a piece of the penis can be easily cut off by a Veterinary Surgeon.

If in foot, squirt in strong carbolic acid, or rub in dry calomel, until insects disappear, then treat for thrush.

If anywhere else, use carbolic acid, or juice of custard-apple leaf, or one part of oil of turpentine mixed with three parts of olive oil, or equal parts of spirits of turpentine and olive oil.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|--|
| <p>SYSTEM GENERALLY—</p> <p>FEVER, from chill, exposure, high feeding or accompanying local pain or inflammation.</p> <p>CATARRH, or COMMON COLD, from sudden change of temperature, or chill.</p> <p>RHEUMATISM, from moist climate, damp; often from washing the horse.</p> <p>CONGESTION, from extra exertion, or after working in hot sun.</p> <p>LOCKJAW, from local injuries or wounds, or from nervous irritation.</p> <p>GONE IN THE LOINS, from intense chill or perhaps from eating grass with ergot on it.</p> | <p>INTERNAL.</p> <p>Suddenly shivers, nose clammy, ears and legs cold. Second stage—skin hot and dry, lassitude, off feed, pulse and breathing quick. Subsequent weakness.</p> <p>Same as fever, but has also cough, brown discharge from nose, and running from eyes. Sneezing fits often occur before catarrh and should not be neglected. Immediate steaming of the head may avert the catarrh.</p> <p>Stiffness of joints; sudden and complete lameness with local swellings, hot and tender. These swellings shift from one place or leg to another. Difficulty in raising the leg, whereas in local foot or leg disease the difficulty is in putting it down.</p> <p>Sudden depression and stiffness all over, head drooping, eyes dull.</p> <p>Head poked forward, tail quivering, muscles rigid, haw protrudes over eye, jaws stiff.</p> <p>Sudden paralysis of hind legs; sinks down on any pressure on the loins.</p> |

Treatment.

DISEASES.

At once put on warm clothing and flannel leg bandages. Steam head and give hot mash. 10 to 20 drops of tincture of aconite is a safe sedative, or give two drachms of nitre every two hours in hot mash. Sponge head and body with vinegar and water occasionally. Keep stable cool. After fever is over, give tonics. If a horse won't eat nitre in a mash, two ounces of sweet spirits of nitre in half a pint of water can be given instead, or a ball made of one drachm of camphor with two drachms of nitre.

Same as above first day. Steam head repeatedly, stop grain, give hot mashes and green food only. Plenty of water to drink, with the chill off it. If constipated, enema of warm water. Purgatives are dangerous.

A smart canter, with immediate rubbing-down at first sign of a cold, will often stop it at once.

Keep horse dry and warm, with flannel bandages to part affected. Laxative food, plenty of water to drink, but on no account any beer. Give exercise, change of air and water, if possible, and rub in turpentine locally, or apply a strong cantharides blister for quick relief.

Don't bleed; put horse in shade, pour cold water on head, sponge mouth and nose with vinegar, and pour a pint of strong spirits and water down throat. Watch for reaction and symptoms of fever, &c., in a few hours.

Probably incurable. Try stupefying with spirits, or administer chloroform (see "REMEDIES") and aperient clyster.

Probably incurable. Firing may do a little good, but professional aid indispensable.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|--|---|
| <p>SYSTEM GENERALLY— <i>(Contd.)</i> LUDIANA FEVER, origin doubtful; epidemic and infectious generally.</p> <p>ORGANS OF BREATHING— COUGH, SIMPLE, from sudden cold or chill.</p> <p>COUGH, CHRONIC, from neglecting the first symptoms.</p> <p>PNEUMONIA, or INFLAMMATION OF LUNGS, from neglected cough usually, but sometimes quite sudden and quickly fatal.</p> <p>PLEURISY, or INFLAMMATION OF COVERING OF LUNGS, usually on the right side only, caused by exposure to cold.</p> <p>BRONCHITIS, and CHEST INFLAMMATION.</p> | <p>Intense fever symptoms, also foetid breath, yellow discharge from nose and eyes, swelling of head, neck, and often on chest also. Delirium ensues.</p> <p>Dry cough; difficulty in respiration; perhaps also slight fever and off feed.</p> <p>Continuous cough.</p> <p>First shivering, then body hot, but ears and feet deathly cold, pulse hard and quick, head protruded, horse won't lie down, and the fore-legs are either stuck out or turned in, breath hot (note, in congestion it is cold), legs apart, won't move or eat. Inside nose very red, and turns livid if worse, but lighter colour when better.</p> <p>Extremities not so cold as in pneumonia; pulse hard and full; cough, if any, is dry and suppressed. Dry crackling sound may be heard by listening at chest.</p> <p>Severe cold, constant cough, won't eat, never lies down, flanks heaving, legs extended. Peculiar wheezing sound inside chest. When nose runs freely and cough gets easy, it is a good sign.</p> |

Treatment.

At once isolate, or if the disease is prevalent and undoubted symptoms, better destroy the horse. Professional assistance indispensable for cure ; in meantime treat as for fever. Don't forget to report to local authorities at once.

A handful of *young* bamboo leaves twice {a day ; steady exercise, soft food, and warm clothing. Old bamboo leaves are useless. A tumbler full of honey and vinegar mixed in equal quantities is a substitute for bamboo leaves.

Feeding on bran-mashes and carrots, with steady work and warm clothing, probably sufficient. If not, give half ounce of nitre in mash or drink, and apply mustard-plaster, or blister, along the throat and between the ears.

In all case of pneumonia, pleurisy, bronchitis, or chest inflammation, avoid purging, blistering and bleeding. Foment sides for two hours with hot water, dry thoroughly, hand-rub legs well, and put on warm flannel bandages and good body clothing. Plenty of *fresh* air is indispensable. If costive, give warm water clysters. Give cold water, half bucket at a time, frequently to drink. Don't check any diarrhœa. Give one ounce of nitre either in mash or in drinking-water first day, and half ounce each following day till urine is profuse.

Steam the head, especially in bronchitis, if horse is willing, but don't worry him. Food must be mashes and green diet, but if he won't eat at all, thick gruel must be given as drench, or stop drinking water, and give milk and yolks of eggs instead.

If symptoms are very urgent, a ball of three drachms of nitre with one drachm of camphor may be given at once.

| Disease and probable cause. | Symptoms. |
|---|--|
| <p>ORGANS OF BREATHING —(Contd.)</p> <p>CONGESTION OF LUNGS, from cold, over-work, or bad ventilation.</p> <p>HEART— INFLAMMATION OF HEART, or CARDITIS, from severe work, or con- stitutional.</p> <p>LIVER— JAUNDICE, or YELLOWS, from over-feeding, want of exercise, biliary obstruc- tions. Lameness of right- shoulder sometimes ac- companies liver disease, but disappears without special treatment as the liver improves.</p> <p>STOMACH AND BOWELS. COLIC (SPASMODIC), from bad food, or chill, or drinking well-water (<i>i.e.</i>, hard). Sometimes no assignable cause.</p> <p><i>Note.</i>—Take care not to mis- take laminitis or enteritis for colic. In laminitis hoof of foot affected is hot. In enteritis pain is not intermittent, and the belly is both hot and tender. With stallions, scrotal hernia is often mis- taken for colic, as de- scribed in “Accidents and Injuries.”</p> | <p>Pants rapidly, nostrils dis- tended, but air expelled is <i>cold</i> (in pneumonia it is hot). Pulse imperceptible, sticks head in dark corner, fore-legs apart; nostrils inside are turgid and <i>purple</i>. Eyes bloodshot, cold sweats, ears and legs cold.</p> <p>Strong pulsations of heart can be seen, and sound thereof clearly heard.</p> <p>Off feed, slightly feverish, urine high coloured, dung at first yellow and clay-like. Second stage—gums and inside nose are <i>yellow</i>; glances often at right side, which is tender on pressure; dung becomes hard, small, and dark reddish colour.</p> <p>No fever or other preliminary symptoms (if horse passes urine it is not colic). The horse stamps and con- stantly looks at and even bites his sides and belly, which is not hot or tender, and pressure of the hand on it seems to give relief. The face is haggard and anxious, nostrils and lips drawn back. Pain is not constant, but gripes are sudden, violent, and <i>intermittent</i>, when horse drops down and rolls on his back if he can. If body is sweaty, it is a very bad case.</p> |

Treatment.

Fresh air, warm fomentations to sides and legs, followed by hand-rubbing, bandages, and warm clothing. Mustard poultice to chest. Soft food. Two glasses of spirits in pint of warm water may be given internally. If symptoms do not decrease, bleeding is necessary. On first symptoms, if possible, give one drachm carbonate of ammonia in pint of water, repeating the dose after 30 minutes if pulse does not abate.

Give 10 to 20 drops of tincture of aconite in pint of gruel as drench to quiet the heart. Work must be moderate.

Steady exercise to promote sweating; stop grain, give mash and green food, and half bucket of water to drink several times a day. If very bad, give purge or warm clysters.

When recovering, half ounce of powdered chiretta may be sprinkled on foot twice a day.

Immediate action necessary, or guts get entangled from griping and horse must die. Rub belly and sides hard by hand and exercise if possible. Back rake and give colic clyster (1 pint turpentine in 2 quarts hot soapsuds) at once, or if you can't get it, give warm water enema. Give camphor-ball (1½ drachms) at once, repeating every half-hour till gripes stop. If camphor not at hand, give quart of beer warm with 2 glasses whisky and one ounce powdered ginger in it. Keep body warm, and afterwards give mash. For various colic medicines, see "PRESCRIPTIONS." 1½ oz. chlorodyne in a pint of oil (linseed or olive) may be given on first symptoms if nothing else is available. The homœopathic remedy is 12 drops of nux vomica on a bit of bread.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|---|
| STOMACH AND BOWELS | |
| —(Contd.) | |
| COLIC (FLATULENT), from drinking too soon after feeding or eating moist green food. | Same as above, but belly also swells and is hard. Delirium often occurs. Eye is dull and sleepy; pulse feeble. Extremities are cold. |
| ENTERITIS, or INFLAM- MATION OF BOWELS, from drinking cold water when heated, exposure, or after severe colic; or result of bad physicing. | Comes on gradually. First loss of appetite, heaviness, shivering fits, skin colder than usual, inside nose and eye-lid red and in- jected. Mouth dry. |
| Usually causes death if not promptly attended to. | Second stage—pulse small, hard, and quick. Breath- ing short and quick. Belly tender; constant pain; lies down with care; does not roll on back. Though the animal may snap at his sides and belly with his mouth as in colic, he takes care not to touch the skin. |
| DYSENTERY, from in- flammation of the bowels. | Great loss of condition, and weakness. Discharge of greasy matter or blood with the dung. |
| SUPERPURATION, from taking too much or too powerful physic of aper- ient nature. | Great debility, constant purging, belly tense, breath fœtid. Extremities warm, tongue covered with white fur, having a brown centre. |

Treatment.

Give drench of—

| | | |
|-------------------|-----|--------|
| Linseed oil | ... | 12 oz. |
| Tincture of opium | | 1 „ |
| Turpentine | ... | 2 „ |

Or 2 to 4 drachms of chloride
of lime in a quart of tepid
water.

Hand-rubbing, back raking,
clysters, clothing and diet
as above.

Don't hand-rub or exercise, but foment belly with hot water, and inject warm water. Give drachm doses of opium, one every hour, till symptoms subside. If symptoms are very bad, blister belly. During convalescence avoid dry food; and give in small quantities, at short intervals, mashes, gruel, carrots, and a little grass. Purgatives should be avoided.

Change of diet necessary, and change of air highly beneficial. Clothe warmly, give drench of linseed oil (1 pint) and warm water clysters. Feed on strong gruel and mashes, and give rice-water instead of cold water to drink. If attack is sudden, give a clyster of one ounce laudanum in 3 pints of warm thin starch, repeating 4 or 5 times at intervals of half an hour. Avoid cordials or astringents.

Rest, warm clothing, warm strong gruel to drink, or quart of boiled milk with eggs beaten up in it. If symptoms do not abate, give 2 ounces tincture of opium, 2 ounces of prepared chalk mixed with a quart of flour gruel as a drench every 3 hours until purging is checked, and tie a blanket, warmed at the fire, round the belly. In very slight cases a handful of flour in a quart of water to drink will often stop the further action of physic.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|--|
| <p>STOMACH AND BOWELS— <i>(Conclud.)</i> DROPSY or WATER FARCY, from chronic debility or fever.</p> <p>DIARRHŒA, from unwholesome diet or hard riding, or debility.</p> <p>CONSTIPATION, or COSTIVENESS, from want of water to drink, or too dry feeding, or want of exercise.</p> <p>WORMS, from unwholesome diet or bad water, are of 12 different sorts, only two of which are common, <i>viz.</i>, round worms (<i>lumbrici</i>), infesting the small intestines, and threadworms (<i>ascarides</i>), about 1½ inches long, which prefer the rectum.</p> | <p>Belly and legs swelled, rumbling bowels, feverish and constipated.</p> <p>Purges in small quantities at every movement : feverish.</p> <p>Belly swelled ; dung dry and hard, and a good deal of straining to get it out.</p> <p>Voracious appetite, but out of condition. Worms can be seen in the dung. The horse rubs his tail to allay irritation. Threadworms' eggs can often be seen just below the anus like a light yellow waxy substance.</p> |
| <p>KIDNEYS AND BLADDER, INFLAMMATION OF KIDNEYS, or NEPHRITIS, from using strong diuretics* or exertion.</p> | <p>Legs straddled, back roached, bladder not distended. Thirst, feverish ; constant attempts, partially successful, to pass urine, which is high-coloured or bloody.</p> |

* *Note.*—Diuretics are medicines to promote

Treatment.

Nourishing diet, followed by tonics, warm clothing, and plentiful bedding. Lance the swellings slightly, and bathe them with warm vinegar and water.

Give 4 lbs. *dry* (on no account will cold boiled do) bran mixed with food daily, rice-water instead of cold water to drink, and keep warmly clothed. Avoid aloes. If very bad, give once a day an ounce of tincture of opium in pint of rice-water as a drench, or 2 drachms of catechu. Work should be moderate.

Warm mashies and green food; steady exercise; if very bad, warm water clysters and hand-rub the belly, and mild purgatives.

For threadworms first clean out the rectum by injecting warm water, and follow this act once with an enema of 6 to 8 ounces turpentine in a quart of linseed oil, or inject 2 drachms spirit of turpentine in a pint of linseed oil, daily for 10 days. Half a pint linseed oil every morning for a week will cure mild cases. In bad cases of round worms mix $1\frac{1}{2}$ drachms each of tartar emetic and sulphate of iron in horse's food daily for a week, stop all grain, feed on mashies with plenty of rocksalt to lick, and then give one of the purgatives mentioned in "PRESCRIPTIONS." If necessary, repeat above after intervals of 10 days. Exercise freely, clothe warmly and tie cloth round the tail to prevent his rubbing the hair off. If foregoing ingredients not available, give 2 ounces oil of turpentine, or 2 drachms spirit of turpentine, in a pint of linseed oil as a drench, repeating after three days if necessary.

Note.—In all cases of suspected bladder or kidney disease, pass your hand well up the rectum, fingers downwards, to feel if bladder be distended or not.

Give aperient clyster. Soak blanket in hot water, put it over loins covered with a waterproof sheet till symptoms relieved. Feed on mashies only, and give linseed tea instead of water to drink.

the secretion and discharge of urine.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|--|
| KIDNEYS AND BLADDER | |
| —(Contd.) | |
| INFLAMMATION OF BLADDER, or CYSTITIS , from using too much irritant medicine. | Legs straddled, but back not roached; urine constantly dribbling, with much pain. Bladder not distended. |
| SUPPRESSION OF URINE, or STRANGURY , from over distention of bladder, pressure on its neck, or stone in it; or from a long journey | Frequent straining, but little voided. Horse struggles violently and sweats freely, evidently from pain. Bladder can be distinctly felt by hand inside. |
| DIABETES , from using too strong diuretics, or exposure to wet, or eating bad food, especially hay. | Profuse flow of urine, great debility, excessive thirst, gums pale, dung dark and stinking, urine watery. |
| THROAT— | |
| GLANDERS , from neglected cold, strangles, or farcy or from contagion. | Often preceded by diabetes. 1st stage.—Small constant watery discharge, usually from <i>left</i> nostrils only. No cough, and horse apparently in good health, though inside of the nostrils will be a coppery or dull leaden hue. 2nd stage.—Nasal discharge like white of eggs, sticks to the nose, hard lumps <i>adherent</i> on one or both sides of underjaw; nasal ulcers with horrible smell; no cough, sore-throat, or fever. |
| STRANGLES , peculiar to young horses, constitutional, or from neglected cold. | Cough, sore-throat, off feed, feverish; swelling under, but not adherent to, underjaw, and abscess. |

Treatment.

Treat as for inflammation of kidneys.

Treat as for inflammation of kidneys, and also give bran-mash with 1 ounce of nitre mixed and plenty of water with the chill off to drink. Half a raw onion freshly cut and rubbed lightly on the orifice of the urethra for a couple of minutes will often induce a tired horse to stall, and thereby relieve his bladder.

Change food, give warm clothing and tonic once a day till symptoms have gone. Bran-mashes mixed with plenty of chopped carrots are beneficial.

Highly infectious and dangerous both to man and beast. No cure. Destroy the horse and all his belongings, and disinfect stable at once.

Note.—If the discharge is thick, purulent, yellow, and runs freely without sticking to nostril, however bad, it cannot be glanders, but a heavy cold in the head. Also if the lumps on underjaw can be moved by the fingers the case is not glanders.

Owner must report this and all other infectious diseases to local authorities without delay.

Liberal feeding and tonics ; steam the head. Hot fomentations and poultices to the swellings. When they are soft lance them, and then usual treatment for sores.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|---|---|
| <p>THROAT—(<i>Contd.</i>) SORE-THROAT or LARYNGITIS, from cold or chill, or violence in giving a ball.</p> <p>BRAIN— APOPLEXY AND STAGGERS, pressure of blood on brain from heat, or feeding voraciously or from collar being too tight.</p> <p>EPILEPSY, from masturbation or disease of the brain.</p> <p>SOFTENING OF BRAIN, formerly called sleepy staggers, from sun-stroke or injury to brain.</p> <p>EYES— OPHTHALMIA, or eye inflammation from plethora, or hard work or external injuries.</p> | <p>Cough, fever, off feed, difficulty in swallowing, tender swelling under jaw.</p> <p>Head drooping or pressed into a corner. Muzzle cold, jugular vein very distended, involuntary discharge of dung. Staggers about, drops down, and either lies half unconscious or struggles violently.</p> <p>Preliminary symptoms are whilst at perfect rest in the stable, the horse shakes his head and works his ears backwards and forwards with an occasional vacant upward stare. Next he falls down in a fit of convulsions, lasting 5 to 10 minutes, after which he suddenly recovers as if nothing had happened. Fits recur ending in death.</p> <p>Tendency to fall asleep when standing, and even with the mouth full of food, general dulness, staggering, stumbling, low pulse and deep respiration.</p> <p>White-film on the eyes, weeping, shuns the light.</p> |

Treatment.

Mashes and green food. Apply mustard-poultice to throat externally.

Bleed from neck. If in harness, at once loosen curb, bearing rein, and collar, and bleed by making two or three cuts down palate with penknife.

The only chance of recovery is from small doses of bromide of potassium twice a day, with soft green food and mashes, but even this is of doubtful efficacy.

Note.—An animal subject to fits of any sort is unsafe to ride or drive, as there is no knowing when he may suddenly tumble down.

No cure. Don't blister or use setons. Keep bowels open, and only work gently.

Mashes and cooling diet. Bathe eye frequently with cold *clean* water. If much inflammation, put on three leeches.

| <i>Disease and probable cause.</i> | <i>Symptoms.</i> |
|--|--|
| <p>EYES—(Contd.)</p> <p>WORM IN THE EYE, from drinking impure water.</p> <p>CATARACT, from internal injury of the eye.</p> <p>BUCKEYE is a natural defect, and causes shying.</p> <p>ULCER ON EYEBALL, or Keratitis, from local injury or constitutional debility.</p> <p>MOUTH—</p> <p>LAMPAS, from indigestion or cutting of the teeth.</p> <p>BLAIN AND BARBS, from constitutional derangement.</p> | <p>Worm, about 1 inch long, can be seen darting about inside eye.</p> <p>First observable by the pupil instead of being clear as usual, becoming a mass of dullwhite, specially opaque in the centre, or by one or two distinct white spots nearly circular with irregular edges.</p> <p>The cornea is palpably too convex when compared with a sound eye.</p> <p>Commences with constant watering, soon followed by inflammation of the cornea or eyeball, resulting in a visible ulcer.</p> <p>Palate swollen, so that horse can't feed properly.</p> <p>Tender swellings on tongue which interfere with feeding, and makes horse irritable when bridle is put on.</p> |

Treatment.

Feed well, give tonics, plenty of exercise, and pure water. The worm must be extracted, which can be easily done by qualified operator ; but person who has never assisted at similar operation should on no account attempt it.

Professional assistant is indispensable.

Incurable ; but to prevent shying, the eye should be covered completely with a blinker when at work.

Blow on to the ulcer a powder of equal parts of calomel and white sugar. No heating food till cured.

Cooling diet usually sufficient. If not, make three slight cuts with penknife down palate. Never use a hot iron for this.

Cooling food and regular exercise. Don't cut them.

PART VI.

ACCIDENTS AND INJURIES.

(Alphabetically arranged.)

BITE BY DOG. Apply lunar caustic (nitrate of silver) freely and after three days remove the scab, and again caustic.

BITE BY SNAKE or SCORPION. Treat as for dog-bite, or give half ounce hartshorn diluted with water internally and rub hartshorn in on the part bitten. For scorpion stings an excellent remedy, for both human beings and animals, is the root of the common weed called *chirchirra* in Hindustani (*achyranthes aspera*) macerated in water, applied to the part stung and a small quantity to be drunk in water. If this be done quickly, it stops the usual agony in half an hour.

BITES and STINGS BY WASP, HORNET, or other insects. Apply spirit of turpentine mixed with equal quantity of laudanum. A plug of chewed tobacco applied instantly to any part stung will alleviate the pain. If a horse's eyelids are swollen and tender from frequent insect-bites, laurel water, applied with a sponge two or three times a week, is a good preventive.

BLOWS and BRUISES require hot fomentations ; a wineglassful of arnica or spirits to half a bucket of water, for half an hour at a time, repeated at intervals of three hours. This may cause temporary swelling, but affords more permanent relief than cold applications. If a bit of skin be knocked off anywhere, smearing the spot with Friar's Balsam will stop the bleeding and effect a cure.

BOTS. The bot-fly (*Gasterophilus equi*) has an unpleasant habit of depositing its eggs, generally in the autumn, on the chest and fore-legs of a horse, so that he may lick them up, with his tongue and pass them into his intestines, where they will germinate and ultimately crawl out of the anus. The eggs, which are small and of reddish yellow colour, should be looked for and removed by hand. Another sort called *Æstrus equi* remains in the stomach, but is more known in Europe than in India.

BROKEN BONES. It is best for the horse to destroy it at once. If, however, professional assistance can be procured within

24 or 30 hours after the accident, the horse may be slung and loose cold water bandage applied in the meanwhile.

BROKEN KNEES. May be slight, only hair scraped off when loose folds of wet linen will be sufficient; bad when blood is seen; or very bad when the synovial glands are cut, and a glary yellowish transparent fluid comes out besides blood.

Treatment.—First remove all dirt by squeezing sponge soaked with water (warm, if *immediately available*, is best, but better use cold than wait) above the wound so as not to touch the injured part with sponge. If the synovial gland is not cut, dab the knee gently with sponge four or five times a day for five minutes at a time, with a wash compound of three drachms carbolic acid to a quart of lukewarm water.

If a horse with broken knees lies down, he will, in bending his legs, constantly re-open the wound, therefore either sling him, or tie up his head so that he cannot lie down. His head should be towards the stable entrance to avoid turning him round each time his knees are attended to.

If synovial fluid comes out, let it coagulate until it drops off of its own accord, and use chloride of zinc lotion constantly (1 grain to 1 oz. of water). Any bits of loose skin must be, as far as possible, restored to original position. Whilst horse is recovering give cooling food. When a broken knee is healed, dress the whole front of the knee and round it with James', or any similar blister to take off all the hair both above and below the injured part. In a month, during which it should be gently rubbed *downwards* daily to make it lie smooth, fresh hair will have grown without any difference in colour to mark the wound as there would have been without the blister.

Gunpowder mixed with a little water will temporarily conceal a slight scar on any dark-coloured horse.

Never stitch up a broken knee, don't probe it, don't cut off broken skin, don't poultice or apply hot fomentation, and don't bandage leg tightly, or you stop circulation of blood. Don't let the horse touch his knee with his mouth, and forbid the syce using the favourite native remedy called *Nilburee*.

BRUSHING. See **SPEEDY CUT.**

BURNS and SCALDS. If slight, a coating of flour or maringold ointment is sufficient. If not, apply lime water and linseed oil mixed in equal parts.

CHOKING. If the impediment in the throat can be felt by hand from outside, push it gently up and down; if it can be thus moved, however slightly, the cure will probably be easy. Give liquids, such as gruel, or an emulsion made of equal quantities

of oil and water mixed together by a small addition of carbonate of potash. Whilst swallowing the liquid, the horse's throat to be rubbed gently by hand.

On emergencies, pour as much water as possible down the throat, in hopes that in coughing out the water, the obstruction will come with it.

A Veterinary Surgeon can clear the throat with a probang (too difficult an operation for a non-professional) or can make a cut into the throat called Tracheotomy.

An injection of morphia under the skin is useful to lessen the spasms of choking, which might kill the horse.

FISTULA. Usually on withers from injury by saddle ; or behind the ear (then called POLL. EVIL) from abuse of bearing rein, or the result of a severe blow. It commences with swelling, which becomes hot and tender ; abscess and sinuses form. If the lump at first starting be treated as described above for BLOWS and BRUISES, it will probably subside.

If, however, it becomes hot and tender, matter is forming, and hot poultices are essential to bring it to a head. Use probe, and if a pipe or narrow hole is perceptible, that is a *sinus*, which must be cut open with a bistoury (doctor's knife) without hesitation, and kept open with wedges of clean tow till it heels from beneath gradually. After cutting, sponge with warm water till bleeding stops ; then apply twice a day a paste of young *kutteele* leaves pounded together with a little salt. If, as often happens, the horse wriggles his skin so that nothing will stick on, touch the sore lightly with a bit of blue vitriol damped, afterwards using chloride of zinc lotion or ointment till cured. Or one drachm of Burnett's disinfecting fluid, mixed with a pint of water, can be injected daily with a syringe into the sinus. Flies must be kept off by covering the whole shoulder or neck with a thin cloth loosely ; the cloth itself being previously dipped in a mild solution of carbolic acid, better still, phenicated camphor.

FITS. More common in harness than in saddle. Horse suddenly stops, twists round, and is evidently giddy, or falls down insensible. Fit passes off generally in ten minutes, but will probably recur. It is caused by working too soon after heavy feed, or harness being too tight.

Treatment.—At once loosen curb, bearing rein, collar, and girths ; pour cold water on head. If very bad, cut palate with penknife till it bleeds freely. After short rest, drive slowly. Subsequently give aperient clyster, and look out for further symptoms.

GALLED WITHERS or POLL. See FISTULA.

GIRTH CUTS. Apply carbolic ointment or lotion, or Friar's Balsam, or zinc ointment. See if edge of girth has got hard ; if so, put on a bit of lambskin, hair side nearest body, or sew on a piece of lint in several folds.

The FitzWilliam Girth is a good preventive. (Sold for 11s. by Davis & Co., 14, Strand, London.)

MILK-HEDGE. (*Euphorbia*.) When browsing or out hunting, the horse may accidentally run his face against this bush, which is so common in the Deccan. The consequence is, that very quickly the face swells so much that even the eyes are bunged up. Prevent the horse rubbing its head, remove carefully any bits of hedge still adhering, but don't touch them with your fingers, as the juice is equally prejudicial to human beings. Then bathe face with lukewarm water or any cooling lotion to allay irritation till swelling subsides.

PRICKLY PEARS. In jumping horses over these hedges, thorns occasionally lodge in the legs or bellies and cause ulceration. The suspected parts should be gently searched by hand, and if the thorn be detected, it can be extracted with tweezers. A little cocoanut oil smeared over the part will cause hidden thorns to come to the surface.

PRICKS IN SHOEING. Don't let the shoe be renched off, but draw each nail separately and examine it at once. If there be moisture on it, the injury is there. If lameness be severe, poultice foot for three days, and pare away the sole at the nail hole. When all pain has gone, rub in hoplemuroma, or apply chloride of zinc. If the case is very bad with inflammation of foot, treat as for QUITTOR.

SADDLE-GALL. See SORE BACK.

SCROTAL HERNIA. A bit of the guts has slipped through an internal rupture into the scrotum, and at first the symptoms may be mistaken for colic, as the horse throws itself on its back and kicks upwards to try and get the gut out of the scrotum (this sometimes succeeds) ; but the horse, in addition, constantly gazes at his scrotum, which drips with sweat, and keeps on drawing up and relaxing. The scrotum becomes permanently enlarged. Stallions in India suffering from this injury may be constantly seen, whilst their owners have not the faintest idea that rupture has taken place.

The only treatment is castration.

SINUS. See FISTULA.

SITFASTS are dark-coloured round scabs, hard but sore, on the back from neglected warbles. Poultice to remove scab, unless you can get a professional man to do so with a knife, then apply zinc or any good healing ointment, or blister the part if very bad.

SORE BACK or SHOULDERS, from undue pressure of saddle or harness. If possible, do not work the animal, though he should be well exercised, and bathe the spot affected for half an hour at a time, several times a day with a warm lotion of one wineglassful of arnica or spirits in half a bucket of water, if the skin is not broken, till the swelling has subsided. But on a campaign, or when travelling, this may be too tedious and impracticable; if so, bathe the part frequently with 1 ounce of salt dissolved in half a tumbler of water, and pour cold water from a bhisti's mus-suck on the spot twice a day from a height of 3 or 4 feet as a douche. Water can be made cold by dissolving a little nitre in it. If a bit of skin be knocked off without any swelling or tenderness, apply Friar's Balsam for a speedy healing. If there is a hot and tender swelling on the withers, inside of which matter can be discerned by pressure of the finger, the treatment for **FISTULA** must be followed. For open sores apply either carbolic or zinc ointment, or the following is an excellent yet simple remedy:— Mix about 5 ounces of camphor with 1 fluid ounce of carbolic acid in a bottle, shake violently, and before use put it in the sun or before a fire. Pour a little frequently over the sore, and at night apply a piece of lint steeped in the mixture to the spot, also if the horse *must* be used, whilst at work. This mixture is soothing, healing, keeps off flies and destroys maggots. It must have more camphor than the acid can melt, so if all the camphor be taken up, add more. With this proviso, either or both of the drugs may be added to the bottle as its contents are expended. Don't add oil or anything else. This is especially useful when a large number of animals, such as transport ponies, have to be treated, being cheap and efficacious.

PREVENTION OF SORE BACK. Salt and water, or alum and water, in equal parts well rubbed in twice a day, hardens the skin. A piece of mutton fat rubbed over the shoulder or back just before the collar or saddle is put on is an additional security, and a softened lamb's skin may be sewn over the whole interior surface of the collar with advantage. Good fitting saddles and collars are essential, and those with Indiarubber sponge lining (patented and sold by Champion and Wilton, 261, Oxford Street, London) are very highly spoken of by military men for campaigning and travelling long distances with impunity in this respect. In the stable avert the pressure of ordinary clothing on any sore

spot by putting pads on either side of it. A saddle should not be removed till one hour after return from work to allow the back to cool gradually. It is a popular fallacy that an extra thick numdah will prevent sore backs, but this only increases the local heat, and a pliable leather numdah with a well fitting saddle is far better.

SORE MOUTH. If sores are inside, wash with alum and water. If at corners, use weak solution of chloride of zinc: or if a hard lump has formed, rub in a little blistering ointment just above corner of mouth. See that bridle is made to fit properly.

SPEEDY CUT is a name given to a swelling or wound inside of and close to one knee from blow given by the other fore-foot whilst going fast. If the injury be caused to the fetlock, it is called **BRUSHING**: when coronet of hind foot is hit by shoe of fore-foot it is a **TREAD**; but if the heel of coronet of a fore-foot is injured by the shoe of hind foot, it is an **OVERREACH**. In each case the treatment is the same. First foment the swelling and clean out all dirt. If very hot and tender, poultice for a day or two, and then apply carbolic ointment or chloride of zinc. The fetlock may be protected by a common "boot." Draw farrier's attention to the subject, and use Charlier Shoes as a preventive.

STINGS. See **BITES**.

STONE IN THE FOOT. Remove the stone at once with a pieker or by knocking it with another stone. If the sole be cut, or lameness ensues, treat similarly as for **PRICK IN SHOEING**.

TICKS may be seen on the skin. They must not be pulled off, but either be cut off with sharp scissors or killed with oil of turpentine.

WARBLES. Small circular dark bruises from pressure of saddle, or from removing it too soon after work. If neglected, they soon turn to **SITFASTS**. Bathe them with strong salt and water or arnica lotion. To prevent them, don't remove saddle till one hour after return from work, and see that saddle be properly stuffed.

WOUNDS by *thrust* of lance, spear, bayonet or knife or other punctures. Bathe with cold water till all oozing has stopped, then cover the mouth of the wound with a plug of tow dipped in collodion or styptic colloid or solution of shellac in methyated

spirits. Avert inflammation by cooling diet of mashcs and green food, and keep bowels open, if necessary, by purgatives.

INCISED WOUNDS, such as are caused by *slash* of sword or knife or any sharp edge, must be treated differently. If muscular fibre be deeply cut, let the wound remain open for six hours to allow escape of blood, merely covering with a loose light cloth to keep off flies. If blood comes out in bright red "blobs," however, it shows that an artery is severed, and the ends of it must be at once tied up with silk-thread by any qualified person, or touching the end of a cut artery with a red hot iron will stop the bleeding. Don't foment with either hot or cold water, as it increases the discharge and may bring on suppurative action. Next wash the wound clean, shave away the hair near the edges, and bring them together and keep them so by putting on strips of cotton cloth covered with glue. If the wound be very gaping, wire sutures, which are less irritating and in every way better than thread ones, may be necessary. On an emergency the wire of sodawater bottles can be used. Trickle "white lotion" (composed of one ounce of acetate of lead, one ounce sulphate of zinc, with one quart of water kept in an ordinary anchovy sauce or other long-necked bottle) occasionally round the wound without disturbing the sutures or removing any dried discharge over the surface of the cut. Sutures can generally be removed on sixth day, but if inflammation sets in or matter forms before that, they must be promptly removed, the wound bathed with tepid water and then dressed with phenicated camphor; or if this be not procurable, with dilute carbolic acid, or nitrate of silver. Cooling diet and purgatives as above. Bandages do harm to wounds by irritating and exciting fungoid growths, and any waterproof cover over a wet dressing is equally bad. Slight superficial wounds would heal of themselves in healthy horses, but in India the danger is that flies deposit dirt in them, so dress with phenicated camphor, Friar's Balsam or carbolic ointment or anything else that will keep flies away.

CONTUSED WOUNDS, such as a whack with a club or butt end of a musket may produce, require warm fomentations as for **BLOWS** and **BRUISES** (which sec).

BULLET WOUNDS are of various sorts. If the bullet lodges, it must be first extracted by a medical man; if it goes clean through any soft part, treat both sides as for punctured wound; but if a bone be smashed or broken, destroy the horse at once. A spent bullet after penetrating the skin will occasionally then pass along the surface of the body, when it can be easily extracted by slitting the skin below where it is felt to be.

BELLY WOUNDS BY PIG'S TUSHES. Throw the horse and, if necessary, put him under chloroform, wash the wound. replace carefully any gut that may be protruding, use strong sutures, and treat as above for large incised wounds.

NOTE.—By means of the foregoing instructions any medical officer or apothecary, though not acquainted with the veterinary art, will be able to treat the ordinary wounds that horses are liable to on service.

Astringent lotions for horse's wounds are : 2 drachms carbolic acid to a pint of water, or 2 drachms sulphate of zinc to a pint of water, or ordinary solution of alum.

PART VII.

POISONS.

Cause, Symptoms and Treatment.

POISONING may be the act of evil-disposed persons, such as chamars or dealers in leather, who want the skin of the corpse, in which case there is but the slightest probability of recovery as in India they are skilful in poisons. If there be any suspicion of this, always have the skin slashed freely to make it useless before the body is removed. Or poisoning may be from accidentally eating poisonous vegetable matter, from licking ointments applied for mange, by drinking water from leaden pipes, or from shot given to conceal symptoms of broken wind; or from drugs, such as arsenic, wilfully administered by ignorant servants with the notion of improving a horse's condition.

VEGETABLE POISONS are most common in India; grass-cutters may inadvertently collect them in cutting grass, or an animal out grazing may eat them. The symptoms are extreme drowsiness, the horse props himself against a wall with his head hanging close to the ground; he then occasionally totters, and ultimately falls down in a stertorous condition; nose, ears, and feet cold. Convulsions and death generally ensue in an hour or so. The only chance of recovery is to rouse the horse from his stupor directly the first symptoms are recognized, lashing him with a whip, flashing gunpowder near him if necessary and keeping him on the move till his drowsiness quite disappears. A drench of eight drachms aromatic spirits of ammonia in a quart of warm ale flavoured with a little ginger should be given as soon as possible, and repeated every two hours till recovery is effected. A good purge should follow next day to clear the system.

ARSENIC properly administered causes a sleek skin, but in excessive doses such as are sometimes given by injudicious grooms. intense thirst, swelling of the eyelids with flow of tears are observed, then the horse gazes eagerly at his flanks, paws and rolls, and there is a great secretion and flow of saliva (or spittle) from the mouth, which distinguishes the case from ordinary colic. Next, the breath becomes hot and foetid, the dung comes out loose and covered with blood and slime, resulting probably in death. Recovery in these cases is vary rare, and nothing can be

done except pouring plenty of thin gruel down the throat to sheathe the inflamed inner surface, and strong blisters may be applied to the chest and sides.

CORROSIVE SUBLIMATE is used in washes for mange and lice, and a horse may lick it off his skin when symptoms similar to those of arsenic, though far milder, will ensue. If the poison has quite recently been swallowed, give at once the whites of 12 eggs mixed together; if too late for this, treat as for arsenic, and the horse will probably recover.

LEAD POISONING, from causes abovementioned, is slow in its action compared with other poisons, and its symptoms are capricious appetite, loss of condition, *a peculiar blue line in the gums above each tooth*, and sometimes convulsive fits. Give a good purge and clysters to start with to clear out the inside, followed by alteratives and tonics.

PART VIII.

FAULTS AND TRICKS.

With their treatment.

(ALPHABETICALLY ARRANGED.)

BITING. Use one of Rarey's Roller Bits. Or throw the horse frequently, sit on his forehead, and clash his jaws together by gripping the jaws, until he has had enough of it. The "leg of mutton cure" consists in presenting a hot greasy joint, which is peculiarly nauseous to horses, to the animal each time he tries to bite.

BOLTING. A Bucephalus Noseband is the best preventive.

CRIB-BITING. The horse catches hold of any bar with teeth and then sucks in air, which spoils his teeth and digestion. This trick is soon acquired from seeing another horse do it, so separate a crib-biter from others. Put a lump of rock salt and one of chalk in his stall for him to lick at his pleasure. Remove all bars or smear them with kerosine oil. If very bad, get a "Bar muzzle."

EATING BEDDING can be checked by substituting sawdust or sand for the usual straw.

JIBBING. Before leaving stable put a round stone, one inch diameter, inside ear, and tie string round ear near tip to keep stone in, or stuff a globe inside each ear. If he still jibs, tap him with stick behind knee, or put bit of rope loosely round fore-legs, either at knee or fetlock, and pull him forward. Or a strong walking-stick with hook handle can be used. Another plan, in harness, is to stand about level with the horse's hip, where blinkers prevent his seeing you, and persistently but gently tap his nose with the butt end of the whip or with a stick. This annoyance will probably incline him to move on to get away from it. Rubbing a handful of mud inside the palate is sometimes efficacious. A long piece of thin cord passed under the root of the tail and then gently pulled by a man on each side standing level with the shoulders, is another good American plan, and is the best way for inducing an unwilling horse to enter a Railway horse-box.

KICKING in stable may be stopped by hobbling hind fetlocks together, or fastening one or both hind feet by a strap to one fore-foot. With an inveterate kicker let one person lead it, while another follows with a long whip to apply the lash smartly under the belly every time the heels are in the air. The American plan for kicking or bucking horse is to "pass a light rope around the front jaw above the upper teeth, cross it in the mouth and secure the ends back to the neck." This is stated to act as an immediate preventive. If kicking suddenly commences at work, first look for and remove any external cause, such as a loose strap or stinging fly. Remember that placing a hand suddenly on the loins behind the saddle will make many animals, specially mares, kick at once. If in harness, holding up or tying up one fore-leg temporarily prevents the kicking whilst you search for the cause. A kicking strap should be used with any horse known to kick in harness. To shoe or examine the hoof of a kicking horse, fasten one end of a light rope to its tail and the other end to the bit, sufficiently tightly to incline the horse's head to one side; he cannot then kick on that side.

MASTURBATION. In no book, whether published in England or India, have I ever seen the slightest reference to this fault, though common in India. A horse whilst in stable, or standing anywhere, flaps his penis against his belly till semen is ejected. This causes loss of condition and energy. The remedy is to twist his ear directly he commences, which stops him at once. Give plenty of work, and at night tie any prickly substance on his belly, rough side outwards, to prevent the trick. If health is seriously impaired, castration may be necessary. Horses learn the trick quickly from others in same stable. A decoction of *kuteela* leaves is used by natives to cause a temporary cessation of this habit.

REARING. Usually stallions who indulge in this vice. If so, put a loose noose of tape round testicles and connect it by strap to the bit. This causes such pain each time he rears as to induce him soon to abandon the habit.

SHYING. If the object the horse dislikes be on the right, turn his head to the *left* (never towards the object) and press with *left* spur lightly, or *vice versâ*. If horse is really frightened, pet and pat him, and speak encouragingly till pass the object, but never do so *after* shying, or he will think you approve, and will soon repeat the performance. If horse shies simply from fun, take no notice beyond a harsh word or two. In no case is flogging or severe punishment for shying either desirable or justifiable. If it arises from defective vision or buckeye, of one eye, it may be

covered with a blinker. In riding a long journey on a shying horse, a pocket handkerchief can be tied across one eye and thereby lessen the discomfort of frequent shies.

N.B.—A nervous rider soon makes his horse nervous.

STUMBLING. An inveterate stumbler should be only used for harness. If horse suddenly commences to stumble, dismount at once and examine all feet carefully, next see saddle has slipped forward or if legs have marks of cutting or brushing. Ride the horse on curb, *lightly*, with saddle well back. Expensive Arabs frequently trip and stumble at a walk, though quite safe at a gallop over rough ground.

TEARING CLOTHING. Fasten a short stick with ring at either end from the surcingle to his headstall, so that the horse can't get his head round; or put on a "cradle."

TOSSING HEAD UP. If a horse, otherwise free from this trick, does it directly the bridle is put on, you may be sure his mouth has a sore in it, or the bit is unsuitable. If it is a confirmed habit, the horse may knock your teeth out, so always use a martingale.

VICE. A vicious stallion may be greatly improved by castration. For real downright vice Rarey's plan is the only cure. Throw the animal several consecutive times daily, as described under REMEDIES. A good, yet simple, plan to make a horse *temporarily* docile is the American one of connecting the tail to the headstall, as described under KICKING, and then letting the horse loose on any soft ground; he whirls slowly round and round; and in a quarter of an hour or so appears completely cowed and submits to his rider.

WIND-SUCKING. Treat similarly as for crib-biting. Saddlers sell straps for prevention of this trick, which, if not cured, spoils the animal's digestion. The symptoms are pressing head against wall, or else sticking it straight out and then sucking in air.

PART IX.

REMEDIES.

How to make and apply them.

GENERAL RULES. Never doctor a horse yourself if you can get professional assistance; it is bad economy at least. When in doubt as to what medicine would be proper, don't give any. Never give castor oil to a horse. In cases of lameness take care the remedies are applied to the right leg, as mistakes in this respect are often made. *Vide* Special Chapter on Lameness.

RULE FOR PHYSICING. Unless in emergency, such as colic, the animal must first be fed on hot bran-mashes until the dung is softened (24 hours is minimum time). Muzzle him the previous night, and give physic early in-morning, followed by drink of lukewarm water and walking exercise, but no food for two hours. Physic acts after 24 hours (sometimes 30), and continues to do so for six or eight hours, during which exercise is strictly forbidden. Continue bran-mashes and lukewarm drink till physic has entirely ceased to act. Never give a second dose within seven days of first. Work may usually be resumed three days after the physic has ceased to act.

SIZE AND MAKE OF BALL. It should not exceed 1½oz. weight, 3 inches in length, or 1 inch diameter. Shape like a sausage. In India when treacle is not procurable, lard can be used for making up balls. Must be wrapped in thin paper, which should be oiled just before use.

TO GIVE A BALL. Turn horse quietly in his stall till his rump is in a corner. Stand on a chair on his right side, gently pull tongue out to his right, then press it against lower jaw with your left hand, slipping the ball (held between tips of fingers of right hand) along palate to root of tongue. Let go of ball, withdraw right hand, release tongue, and give a warm drink. Don't pinch the throat, as grooms often do. A balling iron, price Rs. 7-8 in Calcutta, will prevent the arm being bitten.

TO GIVE A DRENCH. Use a cow's horn, with its broad end cut obliquely and closed with tin, and small end one inch diameter

(through which pour in the medicine). Put horse's rump in corner as for a ball, but a second man is required to keep horse's head up as high as possible by a noose round upper jaw held up with stable-fork or stick. Don't hold the horse's tongue; hold the thick end of horn with right hand, and pour the drench (not more than half a pint at a time) above, and as far as you can beyond the root of the tongue. Always wash horn thoroughly after use. Glass bottles should, if possible, be avoided as dangerous; but on emergency a common soda-water bottle covered with leather will do instead of the cow's horn. Or fluids may be poured down nostril instead of throat, if not containing any irritant.

TO BACKRAKE means to clear out the gut by inserting the hand, fingers pointed together, and the whole arm, if necessary, up the rectum, or fundament. The hand and arm must be well covered with any vegetable, not mineral, oil; olive oil is best. Most syces can perform this operation, which is essential in cases of colic and obstruction of the guts. After it is over, put a small ball of grass covered with oil inside the emptied gut to save the horse pain, or a ball of chopped onions mixed with black pepper.

TO BLISTER. Cut or shave away hair on the part. Rub the blistering ointment in steadily for 10 minutes, and never omit, as a finish, to plaster a little of it lightly over the part and to leave it there. When vesicles have risen, say 24 hours, apply olive oil. Keep head tied up, or put a cradle on, to prevent horse biting blister. Two months' rest necessary after blistering. Never blister a part whilst it is hot and tender, or it will get worse.

HOT FOMENTATIONS. Flannel in several folds, frequently dipped in hot water and then wrung nearly dry, must be applied for three or four hours. When removed, rub dry at once, as, if the part be left wet and uncovered, much harm will ensue. Sponge-opiline soaked in hot water may be fastened on, when practicable, instead of above.

BANDAGES must be three yards long and rolled up in the hand before applying them, and the winding on must begin from below upwards. Indian, as compared with English grooms, are specially handy in putting them on. Bandages of dry flannel *loosely* put on are useful to promote circulation of the blood, and when legs are wet. For wet bandages strips of linen or dosoottee, five inches wide, may be put on, but not tightly, and kept wet with a sponge or bottle. Chamois leather bandages retain moisture longer than any others.

WET BANDAGES. Linen or dosoottee will do, in strips five inches wide. Bind them evenly, take care not too tight and keep constantly wet with a sponge or bottle.

POULTICE FOR FOOT. Get a "poultice boot," but on emergency a loose bag of leather, canvas or gunny will do. Put poultice inside first, then insert horse's foot and tie top of bag round the leg, but not too tightly. If poultice gets dry, it does more harm than good; as a general rule, change it every four hours.

BLEEDING FROM TOE. Never allow farrier to bleed from toe of *frog*, or ugly sore will form. Remove the shoe, and cut with the "searcher" at union of wall and sole at toe of *foot* till blood comes; then place foot in hot water. To stop bleeding put a plug of tow into the cut and tack shoe lightly over it. *Note.*—Bleeding from jugular and other veins is not described, as the non-professional should never attempt it, but use leeches if required.

FROG PRESSURE. Veterinary works often state that frog pressure is indispensable, but omit to tell the novice how to procure it. There are two ways, the best being a hinged bar-shoe sold for the special purpose. The other is to insert thin flat iron bars between sole and edge of shoe. These bars support a wedge of tow or other dressing to cause the actual pressure.

STEAMING THE HEAD. Half fill a bucket with hay, well stamped down. Pour *boiling* water on it every ten minutes. Keep bucket on ground. Hold horse's head over it thirty minutes at a time, three or four times a day.

Second method is a hot bran-mash in *large* nose-bag, put on usual way, but keeping horse's head as low as possible.

THROWING A HORSE. First put plenty of straw for him to fall on. If possible, borrow a set of regular "hobbles," but if not procurable, strap up left fore-leg with a strap three feet long, one inch wide, holes all the way along, and a metal loop about two inches from buckle, to form the noose for his foot. Fasten one end of a 6-foot strap round right fore-foot, and pass the end over his back or below his belly under a surcingle to prevent its slipping. Stand on horse's left side, and with left hand pull the bit towards you, shoving his shoulder with right hand at same time; a man standing on your right side pulls the long strap with his left hand and shoves the rump with his right hand till horse comes down, first on both knees and then on his *right* side. To make him fall on left side, the above process must be reversed as regards sides. Directly horse is down kneel on his neck and

hold his mouth firmly to the ground till he ceases all struggling. If he is a vicious kicker, hobble his hind feet together at first. Keep horse down for 20 minutes, patting and speaking gently, then loosen straps and let him rise if you merely wish to break his temper, and repeat twice a day.

CHLOROFORM, for operations. First hobble or cast the horse as he will struggle violently. Saturate bit of sponge with two ounces chloroform, and half cover it with piece of bladder or oil skin. Hold uncovered part near, but on no account touching one nostril, whilst the other is closed by hand until horse becomes insensible. By pressing sponge without intermission against the nostril, life will be destroyed.

KILLING A HORSE. By "Pithing," *i.e.*, by cutting through second bone of the neck from the head. By shooting: put bucket of food on ground before the horse, and when his head is in it, fire a round bullet high up in his forehead. If in a hurry, cut an artery and let horse bleed to death, or thrust a bayonet or sword into the heart. Blowing down a vein is too complicated for non-professionals.

PART X.

PRESCRIPTIONS.

(Alphabetically arranged.)

NOTE.—*The simplest and most easily procured ingredients have been selected, and most of them are procurable in the Bazar, but as drugs of inferior quality cannot produce the required effect and adulterated articles must be positively injurious, it is far better and ultimately cheaper to deal with a reliable English Firm, such as Bathgate, Scott, Thomson or Smith, Stanistreet, of Calcutta, Kemp, of Bombay; Lyell, of Allahabad, &c.*

APERIENTS. See CLYSTERS and PURGATIVES.

ARNICA is little better than ordinary spirits in its action but is used, as a groom who might himself drink the latter, will apply the former as directed.

ARSENIC, though a valuable remedy, is too dangerous for use by any but professional persons.

BAMBOO LEAVES. One chittack of young leaves given morning and evening is highly beneficial for cough.

BEEF SOUP, strong, may be given as a drench, or one quart per diem may be mixed with the food in cases of weakness or emaciation.

BLISTERS. Proper blistering ointment, such as James' Blister, should be obtained. For emergencies, use a paste made of a pound of common mustard mixed with boiling water (vinegar must not be used); or a paste of one pound garlic mixed with two pounds wheaten flour, applied for 15 minutes, is a pretty strong blister. For large surfaces, as in shoulder lameness, kerosine or petroleum oil may be well rubbed in for two consecutive days.

BRAN-MASH. Rinse a bucket with hot water and throw it out. Then put in three or four pounds of bran and pour in boiling (N.B., must be boiling) water slowly, constantly stirring with a stick till a thin paste is formed. Add one ounce of salt. Cover over to keep steam in for 15 minutes and then give to the horse

directly it is cool enough to eat. As a mash soon turns sour, never give one not freshly made, and clean out bucket well afterwards. As substitute for bran-mash, three handfuls of bran in half bucket of tepid water to drink may be used. Bran is laxative as a mash warm, but is binding when eaten dry.

CALOMEL is now superseded by aconite for horses for internal use.

CAMPHOR BALLS, consisting of $1\frac{1}{2}$ drachms of camphor each, should be kept in a glass-stoppered bottle for emergencies, specially in a train or on the march. Good for colic, or when greatly fatigued, being both sedative and antispasmodic. Also for fever or fresh cold or cough.

CAMPHOR, PHENICATED, is good for wounds. See that heading in Chapter on "ACCIDENTS AND INJURIES."

CARBOLIC ACID is used internally and externally for horses. For colic one drachm in a pint of warm water as a drench: for sores 1 part to 80 of water; for cracked heels 1 part to 20 of water; to kill flies 1 part to 40 of water.

CARBOLIC OINTMENT, as sold by Bathgate & Co., of Calcutta, is splendid for any injury to the skin. Always keep a 2-rupee pot at hand for instant application in case of girth cuts or wounds.

CAUSTICS. For bites of dog or snake only lunar caustic will do. For sores or wounds a piece of blue-stone (sulphate of copper), slightly damped, should be rubbed lightly over the part. Or reduce blue-stone to powder and sprinkle it over the sore.

CHALK. If a horse has indigestion or acidity, put a lump of chalk in the stall for him to lick when he likes, as well as a lump of salt.

CHLORODYNE may be given for colic, $1\frac{1}{2}$ ounces in a pint of olive oil.

CLYSTERS. The pipe should be well greased, and not inserted more than 8 inches. No oil should ever be mixed in a clyster, except linseed oil, to get rid of worms.

Aperient clyster consists of half pound Epsom salts, or even common salt, in gallon of warm water (100° F.). Or two ounces soft soap dissolved in gallon of warm water will do.

For colic, either spasmodic or flatulent, dissolve two drachms aloes in three quarts of warm water, then stir in six ounces of spirits of turpentine. Or one pint turpentine in two quarts of hot soapsuds is both soothing and laxative.

For diarrhœa, dysentery, or superpurgation, one ounce laudanum in three pints warm thin starch (100° F.), repeated every half hour as long as necessary, is soothing and astringent.

For mild dysentery, cold linseed tea, at intervals of one hour, is good.

For keeping up horse's strength when food is refused, a clyster of thick gruel, or starch if there be purging also, is good. Only one quart at a time should be given, or it will be ejected.

COLIC BALL (Colonel Robarts'). Two drachms of assafoetida, three drachms saltpetre, and one drachm of opium, mixed together in one ball

COLIC DRENCH (Youatt). Half ounce tincture of opium with two drachms essence of peppermint gives immediate relief if horse be walked or even trotted about. *See also* "CLYSTERS." Or four ounces spirits of turpentine, 12 ounces linseed oil and 1½ ounces of laudanum can be mixed and given as a drench every hour till the pain ceases, either in spasmodic or flatulent colic (Stonehenge).

COUGH MIXTURES. Mix four ounces assafoetida, two ounces of ginger, and two ounces treacle; divide into 16 balls, and give one thrice a day; bran-mashes and lukewarm water to be used instead of ordinary food during the time. Or a tumbler of honey and vinegar in equal parts twice a day. Or two chit-tacks of *young* bamboo leaves daily.

CORONET OINTMENT, to cause secretion of strong horn. Cantharides ointment and lard in equal parts, well rubbed in on coronet.

DISINFECTANTS. Chloride of lime is good for empty buildings, but not for those containing live animals, as it has a strong suffocating odour. It clears rats away effectually. MacDougall's Disinfecting Powder, composed of lime, carbolic, and sulphurous acids, is the best and cheapest disinfectant where live animals are kept, specially for stables, as it at once arrests the emanations from urine and dung, and only requires to be sprinkled about with a common dredger. If it is not available, the following can be used: For a strong smell of urine which injures a horse's health and eyesight, a solution of one pound sulphate of iron to a gallon of water is good to clean the floor and drains with; or sprinkle sawdust with dilute sulphuric acid underneath the litter. Rags dipped in crude carbolic acid can be suspended in a stable with advantage, and in the rains charcoal fires can be lighted whilst the horses are out.

EGGS. In cases of debility and illness, six raw eggs, beaten up with little warm water and salt, may be safely given twice a day as nourishment. Forbid groom ever giving an egg in shell entire, as English lads often do.

EPSOM SALTS (Sulphate of Magnesia). Four ounces may be mixed daily with the food for a few days (or eight ounces given at once as a drench instead), if laxative is required in fever, disease of liver or any respiratory organ.

FUMIGATION to get rid of mosquitoes and other insects. Shut all doors and apertures, place burning charcoal in various spots and throw on it a pound or so of sulphur; let the fumes fill the building for four hours, then thoroughly ventilate it before bringing back the horses.

GOULARD'S EXTRACT is a safe application for burns and scalds, or after blistering and firing to soothe the surface.

GRUEL. Mix one pound oatmeal in gallon of water; keep stirring over fire till it boils and *five minutes afterwards*. It is a good restorative, preferable to beer, stout, or spirits.

GUM ARABIC can be given as a drench, half ounce dissolved in a pint of water, as a demulcent to allay irritation of kidneys and bladder.

HAIR OINTMENT. Common Vaseline pomade sold by hair dressers for human baldness is very efficacious to promote quick growth of hair after broken knees on any place where hair is knocked off. Ryves recommends betel-nuts charred and rubbed down with cocoanut oil. This being black, also conceals scars on dark-coloured horses. A mixture of one drachm cantharides with two ounces of lard rubbed in *hard* twice a day will restore hair.

HAND RUBBING of the belly and sides is good for colic, but bad for enteritis or inflamed bowels, as stated in the treatment for those diseases. Hand-rubbing of the legs relieves fulness and is beneficial.

HOOF OINTMENT. Clarke's Hoplemuroma is best. A cheap substitute is one pound Stockholm (*not* coal) tar, one pound lard, and half pound turpentine, melted together.

LINSEED MASH. Boil $1\frac{1}{2}$ pound linseed for eight hours, not very thick: mix in two pounds bran and one ounce salt. Cover over and let stand till cool enough to be eaten.

LINSEED OIL. Dose 1 to $1\frac{1}{2}$ pint as a purgative, cold drawn and not boiled. It does not irritate the bowels as aloes sometimes do. Two ounces may be mixed daily with the ordinary food of a horse which is out of condition.

LINSEED TEA, to soothe urinary organs and mucous membrane. Boil one pound of linseed in gallon of water and let stand for twelve hours, stirring occasionally.

LOTIONS. To heel sores on mouth or any tender part : One scruple chloride of zinc with one pint water.

Stronger, for ulcers and bad sores : Two drachms chloride of zinc, or two drachms blue vitriol, with pint of water.

Very strong, to burn proud flesh : One ounce blue vitriol in pint of water.

Astringent, for sores : One part carbolic acid to eighty parts of water.

Astringent, for cracked heels and sores smelling nasty : One part carbolic acid to twenty parts of oil or glycerine.

Cooling, for bruises and incipient saddle galls : One ounce salt with four ounces coldest water.

For sprains and bruises from blow : Vinegar and hot water in equal quantities.

For sore eyes, common Goulard lotion may be used, or warm milk will soothe and reduce inflammation of external parts.

For mares, when the vagina is inflamed and there is a copious yellow discharge, inject one drachm chloride of zinc mixed with one pint of water.

The celebrated **WHITE LOTION** of Professor Dick, for wounds and sores, is one ounce acetate of lead, one ounce sulphate of zinc and one quart of water, to be kept in an anchovy sauce or other long necked bottle from which it can be sprinkled over the part required by putting the forefinger over the mouth of the bottle.

MARIGOLD OINTMENT. Sold by Bathgate & Co., Calcutta, and most chemists. Good for any sore or cut. Spread ointment on a bit of *clean* cloth, and tie it over the part with a bandage.

MILK. A seer given three times a day is nourishing when a horse won't eat from illness.

MUSTARD is an useful counter-irritant in cases of sorethroat or internal inflammation. It should not be mixed with vinegar or turpentine, which destroy its active principle, but only with tepid water. When it has become of the consistency of thick cream, rub it well on the skin, and gently sponge it off after the effects desired are obtained.

MUSTARD PLASTER should not be kept on more than ten minutes at a time, but can be repeated at intervals. Useful for

sorethroats and cold. The action is increased if the part to which they are applied be covered with oiled brown paper to exclude the air.

OSSIDINE, Cole's patent, price 10s. 6d., a pot in England, is the best thing for an amateur to use in accordance with the instructions printed on it, in cases of splint, spavin, curb and other bony excrescences, when professional aid is not available.

POULTICES. Of carrots or turnips: Mash up the vegetable with boiling water, and apply at once.

Of linseed: Mix four ounces linseed-meal with half pint boiling water and then stir in half ounce olive oil. Apply as warm as possible. If for a painful sore, add a little opium. These are suitable for ill-conditioned sores.

Of bran: Same directions as for linseed. Bran dries so quickly that it is far inferior to carrots or linseed.

Charcoal poultice is made by adding two ounces finely-powdered charcoal to any of the above poultices. Useful, specially for feet, when sores smell offensively.

By adding sulphate of zinc, a poultice will act as an astringent dressing.

PURGATIVES. The best is a ball of Barbadoes aloes (four to six drachms), with one drachm ginger powdered finely, and mixed with sufficient palm oil or treacle to form a mass.

For a *drench*: Dissolve 5 drachms Barbadoes aloes in half pint boiling water, add 1½ ounce laudanum, 1½ ounce spirits of nitric ether, and give the dose as soon as it is cool enough.

Note.—A drench acts more quickly than a ball, but is less sure, being liable to be spilt.

Purgative for a vicious horse that will not take ball or drench: Put half ounce tincture of croton in the drinking water. See "EPSOM SALTS and LINSEED OIL."

RESTORATIVES. Gruel, as already described, is best. If not available, brandy or whiskey in quarter pint doses, or a quart of warm beer flavoured with a little grated ginger, can be given. Sponging nostrils and head with vinegar and water and shampooing, or mild Turkish bath, are refreshing after severe fatigue.

RICE WATER, called **KOONJEE**, is made by boiling half a seer of rice in two gallons of water for two hours. It is given as a drink in cases of superpurgation.

SALT. Two ounces a day mixed with food is good. A lump of rock-salt in the stall for horse to lick keeps off worms.

SALT WATER (for hardening skin under collar or saddle). Mix one ounce salt with four ounces cold water.

SCARS or blemishes may be concealed by applying a little gun-powder and water mixed together. It is perfectly harmless. To renew hair on scars, see "HAIR OINTMENT."

SEDATIVES. In fever or any affection of the heart, 10 to 20 drops of tincture of aconite may be given at intervals, until the pulse is relieved.

SULPHUR is useful for skin diseases and for fumigation. See those headings.

SUTTOO is an inferior substitute for gruel in India. A pound of finely ground parched gram and barley, or of Indian corn, is put in half a bucket of *cold* water for the horse to drink.

STOPPING for feet. Cowdung with one-fourth its weight of clay well mixed. Stopping should never be used except when foot is hot from long day's work, or it is necessary to soften the sole prior to cutting it.

TARTAR EMETIC should never be given to horses, as its action, like that of castor-oil, is very uncertain.

TONICS. After illness, change of air and scenery, even if only to another stable, is beneficial. Best tonics are fresh air, good grooming, feeding, exercise, and judicious clothing. If medicine be necessary, take sticks of common chiretta, dry in sun, reduce to powder, and sprinkle half ounce twice a day over the food. Horses like it. Or mix one drachm sulphate of iron with the food twice a day.

After fever, half a drachm of quinine dissolved in a few drops of sulphuric acid, and then mixed with a pint of water is a good tonic, repeating after three days if necessary. Or give two ounces of tincture of gentian in a pint of water.

After long illness of fever, cough, or catarrh, followed by great debility, mix one ounce blue vitriol (sulphate of copper) with half ounce white sugar. Divide into eight powders, and give one or two daily in the food. This is also a good astringent powder for grease.

VINEGAR should not be used with mustard plasters. Sponging the nostrils and dock with weak vinegar and water is refreshing to sick animals, and a stronger mixture is a restorative after fatigue. Vinegar and hot water in equal quantities is a lotion for sprains and bruises.

WATER DRESSING. A soft cloth saturated with coldest water, covered with waxed or oil cloth, to be changed at least every three hours. To make water cold, nitre may be dissolved in it, but must be used at once. The hydropathic treatment for sores.

WEIGHTS and MEASURES for medicines:—

Dry measure.

| | | | |
|--------------|-----|-----|--------------|
| 20 grains | ... | ... | one scruple. |
| 60 grains | ... | ... | one drachm. |
| 437·5 grains | ... | ... | one ounce. |
| 7000 grains | ... | ... | one pound. |

Note.—Though the terms scruple and drachm were officially abolished years ago, they are both still used in practice.

Liquid measure.

| | | | |
|-----------|-----|-----|-------------|
| 60 minims | ... | ... | one drachm |
| 8 drachms | ... | ... | one ounce. |
| 20 ounces | ... | ... | one pint. |
| 8 pints | ... | ... | one gallon. |

FOR EMERGENCIES, when proper weights are not procurable, remember the following rough equivalent:—

| | | | |
|---------------------------|-----|-----|--------------------------|
| One rupee | ... | ... | 3 drachms or 180 grains. |
| An eight-anna piece | ... | ... | 1½ drachms or 90 „ |
| A four-anna piece | ... | ... | 45 grains. |
| A two-anna piece | ... | ... | 23 grains (nearly). |
| A half anna | ... | ... | 200 grains. |
| A pice | ... | ... | 100 grains. |
| Two Indian postage stamps | ... | ... | one grain. |

For liquids, a common sherry glass is usually about two ounces, and a tumbler holds about ten ounces or half a pint.

PART XI.

STABLE HINTS.

(Alphabetically arranged.)

BEDDING should consist of wheat, oat, or rye straw, as barley straw is bad. When this is not procurable, sawdust, about 100 pounds per week, or sand will do. These are both useful for horses addicted to eating their bedding.

Bedding should be removed during the day-time, or swelled legs may be caused.

BUILDING must be well ventilated, 1,500 cubic feet at least for each horse. well lighted, but without glare, perfectly free from damp. Floor of sun-burnt bricks should have slope to rear of one inch per yard, with a tin pipe underneath to carry off urine at once outside the building. In hot weather use chicks to keep out flies. In damp weather, whilst horse is absent, light charcoal fire for an hour or two in the stall. Stables of fire-burnt bricks or stone are best, though a well thatched shed open all round with movable mat screens for wind or rain is often sufficient. If floor be damp, put down six inches of dry sand, renewing daily any soiled portions, and take care to have good drainage round the outside of the stable. Loose boxes are preferable to stalls. In hot dry weather picket the horses at night without heel-ropes in the open air. Poultry and dogs should not be allowed in stables, though a cat is useful to keep away rats. Mangers in India are unnecessary, as feeding from a bucket on the ground prevents hasty eating.

CHALK. A lump may be left in the stall for a horse to lick at his leisure if he has signs of indigestion.

DISINFECTANTS and rules for **FUMIGATION** to clear stables of insects have been already detailed in the Chapter on "PRESCRIPTIONS."

DRINKS. Water for drinking is best when taken from a running stream, being soft; from a tank is next best; from a well is the worst, as being hard it may cause gripes. It should be filtered, if practicable, or at all events passed through a clean cloth to prevent live insects being swallowed with it. If a

horse be subject to colic, his drinking water should be boiled first and given lukewarm. Soft is better than hard water, because it is more free from impurities, and therefore more quickly absorbed into the blood. One gallon at a time is sufficient, three times a day, one hour *before* each meal, or a constant supply of water may be left in the stall of a sensible horse. Never give water *shortly before, during, nor for two hours after a meal*, or flatulent colic will probably ensue. A horse can with impunity drink cold water in moderation, say half a gallon, immediately after severe exercise whilst still heated, but not when he has commenced to cool down. Lukewarm water or gruel is then best.

DUNG and URINE, specially the latter, must never remain inside the stable one minute longer than necessary. Ammonia from urine causes disease of eyes very quickly.

FOOD. Some peculiarities of the horse must be considered : to allow plenty of room for the lungs the stomach is comparatively very small, and if overloaded through voracious eating internal rupture and death may follow, as its conformation prevents relief by vomiting. Hence the necessity for frequent moderate feeds ; and when the daily quantity of grain is required to be increased, an extra meal should be arranged, instead of increasing the usual quantity at each ordinary meal. The horse has no gall-bladder, so digestion is *continuous*, and there are 90 feet of entrail, which must not be empty, so *bulk* as well as quality of food is required ; hence condensed articles, such as forage, biscuits, however nutritious, will not suffice without grass or hay.

When buying a new horse the best plan, if he be in fair condition, is to continue whatever food he is accustomed to. But this may not be ascertainable, and then 10lbs. of grain (5 of gram and 5 of bran or boosa mixed) divided into three meals, with 7 to 10 seers of grass, or 5 seers of hay, is a fair average quantity daily for a horse of fifteen hands in steady work. The grain can be reduced or increased according to size and work.

Gram, though rather heating, is the usual staple food : 3 to 5 seers daily mixed with bran, which in India has some nourishment left in it. Give an occasional change of food, such as barley, oats, or a bran-mash, on Saturday nights. Gram one year old is best, and should be free of insects. If bran alone is procurable, 6 seers daily is required. The crushed food sold in Calcutta is excellent. Oats are good ; barley disagrees with some horses, though others thrive on it. A little Indian corn may be mixed with other food, but if used alone, it, as also raw wheat, will cause colic. Unhusked rice called dhan given raw may be mixed with equal weight of gram or bran. Gram, oats,

dhan, Indian corn, barley should all be bruised, though not ground up, before issue to ensure mastication, and if barley alone is available, it should also be parched.

GRASS, &c. Doob or Hurryalee grass, when procurable, is far the best; it should be picked and beaten to eliminate dirt, and dried for two days in the sun, but not wetted before use. If only long green grass be obtainable, it must be dried, as wet grass often causes colic. In Hill Districts, such as Darjeeling, bamboo leaves are used as an entire substitute for grass. The Australian hay sold in Presidency-towns is specially useful when travelling by rail or sea. Chopped hay should only be used when a horse must be fed from a nose-bag, as on the march. Sugarcane in bits, half a foot long, is a great treat and nutritious though not good for the wind. It is specially suited for short halts during long marches.

Green food is always beneficial, such as a seer of lucerne, guinea grass, *Reana luxurians*, or clover. If not to be got, 1 to 4 lbs. of raw carrots or parsnips chopped up, or half a pound of cold boiled potatoes, cut in slices, can be mixed daily with the ordinary feed of grain. Lucerne grass should be previously dried in the sun. Bread and sugar should only be occasionally given in small bits, by hand, as a treat.

Forage biscuits and Silo grass are uncertain, as many horses will not, though hungry, touch them, whilst others thrive on such diet. In the Peninsular War troop-horses on hard work were successfully fed on 8lbs. of sugar in four feeds, with 7lbs. of hay daily, instead of 8lbs. corn with 12lbs. of hay.

When practicable, 1½ hours should elapse after feeding before work is commenced.

WHAT TO AVOID. Never give damp hay, cabbages, celery, anything greasy, the green tops of carrots and turnips, husked rice called chanwal, nor unripe vegetables. Beans are too heating for India, though so much used in England.

GROOMING should always precede and not follow the feeding.

SADDLE should not be removed for one hour after return from work, or warbles may be caused. Take care that saddle fits the horse, and that stuffing is in good order.

SADDLERY should be kept clean with good leather of yellow bar-soap, rubbed off with a bit of chamois leather. Don't allow oil or grease to be put on the bit, as it is very offensive to the horse. If momrogan be required, melt one pound wax with three pounds mutton fat, strain, and when nearly cold add one pint spirits of turpentine (Ryve's Recipe). This mixture

is also said to be a first-rate substitute for Holloway's Ointment. Stains on brown leather can be removed by fresh lime juice. To soften it, rub occasionally with a little fat from sheep's kidney, or deer's suet, or castor-oil, but all other vegetable oils are bad. To polish leather, dissolve white of eggs in spirits of wine or in gin, and brush the mixture lightly over the surface required. A collar should not be lined with coarse woollen cloth, as it causes warbles and skin disease, but with light smooth leather or a softened lamb's skin, if the horse suffers from the collar.

SALT should be mixed with the grain, about two ounces a day, equally divided in the feeds or else a lump of rock-salt should be always left in the stall for the horse to lick when so inclined.

SHOEING. The shoe must first be made to fit the foot without projecting anywhere beyond the hoof, and not the foot rasped away to fit the shoe. Shoes must be removed, at least once a month, even though not much worn, as hoofs grow constantly. The frog should never be touched by the knife unless it is diseased. Five nails sufficient, three on outer and two on inner side at equal distances from the toe with none at inner heel, so as not to interfere with the natural expansion at that part which takes place each time the foot touches the ground. If nails are too near the heels, contraction of the foot must ensue, however perfect in shape the shoe may be, as the natural expansion is prevented whilst in motion. Spreading apart the ends of a shoe to improve a foot is worse than useless, as the other feet may catch on the ledge thus formed, and a hoof is not opened cut by a shoe but *by the position of the nails* in the shoe. Charlier shoes, which are merely a sort of tip, are useful for contracted feet. In India, horses which have not much work on hard roads are best unshod. On active service, officers can purchase shoes and nails from the Commissariat Department.

WASHING a horse should be forbidden; hair won't dry quickly, and rheumatism, grease, &c., often ensue. Mud and dirt can be removed by brush and hand far better. In hot weather, standing for 10 minutes in a running stream, if dried and exercised at once after it, is beneficial.

PART XII.

GLOSSARY OF TECHNICAL TERMS.

(Alphabetically arranged in simple language for persons entirely unaccustomed to horses.)

ACTUAL CAUTERY is a term often used in veterinary work without any explanation. It means the use of a red-hot iron for firing. This should not be attempted by an amateur.

BANGING is cutting a tail square.

BARs are two pieces of horn seen on sole of each foot. They start from heels, and meet obliquely near middle of sole. The ridges of the palate are called also bars.

BAR-SHOE is a shoe with the ends connected by a flat bar. Useful for horses that have had thrush, &c.

BISHOPING is the dishonest trick of making an old horse look like a young one, specially as to teeth marks.

BLAZE is a white patch on face between eyes. A white-faced horse is technically described as "snip, star, and blaze."

CALKIN is the end of a shoe turned down to prevent slipping, as usually seen on a cart-horse's hind feet.

CAVESON is an instrument used for breaking in young horses.

CHARGE is a strong adhesive plaster (almost obsolete).

CLIP is a bit of shoe turned up either at toe or side to keep it on better.

COFFIN (or PEDAL) BONE is inside each hoof, of similar shape but less than half its size.

CORONET is the band or ring just above the hoof where horn is secreted.

DISTANCE on a race-course is 240 yards from the winning post.

DOCK is the part just under the tail.

DOCKING, an old-fashioned plan of cutting off some joints of the tail.

ELBOW is the joint at top of each foreleg near the ribs.

FETLOCK is the joint where lower part of leg, both fore and hind, turns obliquely forward.

FROG is the triangular elastic substance seen at back part of sole when a foot is lifted up.

GAG SNAFFLE is the ordinary snaffle bit but double reins, of which the second passes through the side rings, and is fastened to the cheek straps of the bridle. Useful for a horse that holds his head low and bores on the bit, but decidedly bad for a stargazer.

GELDING means a castrated horse.

GINGERING is a trick of putting a piece of ginger inside a horse's fundament to make an aged or sluggish animal show temporary vivacity whilst the sting lasts.

HAMES is the part of the collar to which traces are fastened.

HAND. In measuring horses a hand is four inches.

HAW is a dark cartilage at inner corner of each eye, which can pass over the eye-ball to clean it. Sometimes it sticks out and is inflamed; if so, on no account allow groom to cut it off, but apply cooling lotion only.

HOCK is the joint of each hind leg corresponding to the "knees" of the forelegs.

LAMINÆ. Name of 500 sensitive little plates, or leaves, which line each hoof to save concussion.

NAVICULAR BONE is one like a shuttle inside each foot; it can neither be seen nor felt from outside.

NEAR SIDE means the left side.

NICKING was a barbarous old plan of making a tail stick out by cutting some of its muscles.

OFF SIDE means the right side.

PASTERN is the short oblique part from hoof to the upright part of each leg, fore and hind.

PATTEN SHOE is one with very high heels, used after sprains of back sinews.

PORT of a bit is the arched part which allows space for the tongue underneath it.

PROBANG is a long bit of whalebone with ball at the end, for clearing horse's throat of any obstacle.

QUIDDING means partly chewing food and then dropping it from the mouth. Causes are either irregular teeth, or the throat being sore. It is an unsoundness.

RECTUM is the end of the guts nearest the tail, where the hand can be inserted to feel the bladder, or to backrake.

ROWEL was formerly used for provoking local inflammation. Also name of that part of spur which pricks the horse, *e.g.*, star rowel, fringed rowel.

SCROTUM is the bag in which the testicles are contained.

SETON is a bit of tape with ointment on it, passed by means of a seton-needle through the foot or other diseased part.

SHEATH is the outer covering of the penis.

SNIP is a white patch on a horse's nose. See "BLAZE."

STALE is to pass urine.

STIFLE is the large joint of each hind leg close to the flanks. The stifle-bone, or **PATELLA**, corresponds to the human kneecap.

TROCAR is a small instrument used for letting gas out of a horse's inside by plunging it through the flank. None but professional men should attempt to use it.

TWITCH is a stick with a loop at one end for holding a horse's nose if he is troublesome, or for holding his head down by slipping the loop over one ear and twisting round till tight.

WEAVER is the name given to a horse which persistently waves its head from side to side whilst at rest. This is an unsoundness.

WITHERS is the lump between neck and back at top of shoulders, from the top of which a horse's height is reckoned.

YARD is the common name for the penis.

PART XIII.

HINDUSTANI VOCABULARY.

NOTE.—*Indian grooms are usually illiterate and their local dialects vary so much that elaborate collections of Vernacular Synonyms are of little practical benefit. The following common terms may be of use to residents in Bengal, and also in parts of the other two Presidencies. Every horse-owner should find out for himself what words his servants best understand.*

| | | | |
|----------------------------|-----|-----|----------------------------|
| Aloes | ... | ... | Moosubbur; elwar. |
| Assafoetida | ... | ... | Heeng. |
| Bamboo-leaves | ... | ... | Bans ke putte. |
| Bit (of bridle) | ... | ... | Dahána. |
| Bladder disease | ... | ... | Phookney men durd. |
| Blue-stone or blue vitriol | ... | ... | Neela tutiya. |
| Bran | ... | ... | Bhoosa; chokur. |
| Breath | ... | ... | Dum; nafas. |
| Camphor | ... | ... | Kafoor. |
| Carrots | ... | ... | Gajja. |
| Catechu | ... | ... | Kuch. |
| Chalk | ... | ... | Kurri mutti. |
| Chiretta | ... | ... | Chiretta. |
| Clothing or horse cloth | ... | ... | Jhool. |
| Clyster | ... | ... | Pichkari. |
| Cold or catarrh | ... | ... | Surdi luga. |
| Colic | ... | ... | Koolinj; pét men morara. |
| Costive | ... | ... | Pét bund. |
| Cough | ... | ... | Khansi. |
| Cracked heels and grease | ... | ... | Gabchi men bimári. |
| Croton nut | ... | ... | Jumalgotri. |
| Debility | ... | ... | Kumzori. |
| Diarrhœa | ... | ... | Dust luga. |
| Drenching-horn | ... | ... | Diwai ke sing. |
| Dung of cow | ... | ... | Gobur. |
| Dung of horse | ... | ... | Leed. |
| Dysentery. | ... | ... | Amgirte. |
| Enteritis | ... | ... | Untri men durd or boghmam. |

| | | | | |
|----------------------|-----|-----|-----|----------------------------------|
| Farcy | ... | ... | ... | Zurhirbad. |
| Fever | ... | ... | ... | Bokhar; tup. |
| Flour | ... | ... | ... | Maida. |
| Fore-leg | ... | ... | ... | Háth. |
| Frog of foot | ... | ... | ... | Pootli (also means pupil of eye) |
| Garlic | ... | ... | ... | Lahsan. |
| Ginger, green | ... | ... | ... | Udruk. |
| Ginger, dry | ... | ... | ... | Sonth. |
| Glanders | ... | ... | ... | Kunár. |
| Ground barley | ... | ... | ... | Jow ke adawur. |
| Gut | ... | ... | ... | Untri. |
| Hair, short on body | ... | ... | ... | Roen. |
| Hair on mane or tail | ... | ... | ... | Bál. |
| Hind leg | ... | ... | ... | Paon. |
| Holster | ... | ... | ... | Kuboor. |
| Hoof | ... | ... | ... | Soom. |
| Inflammation | ... | ... | ... | Sozish. |
| Kerosine oil | ... | ... | ... | Mutti ka tel. |
| Knee | ... | ... | ... | Zanoo. |
| Linseed | ... | ... | ... | Ulsi. |
| Maggots | ... | ... | ... | Kira. |
| Mane | ... | ... | ... | Ayál. |
| Mange | ... | ... | ... | Kujli. |
| Marigold | ... | ... | ... | Genda. |
| Matter, or pus | ... | ... | ... | Peeb, muadh. |
| Nitre | ... | ... | ... | Shora. |
| Nostril | ... | ... | ... | Nak; nuthna. |
| Nux vomica | ... | ... | ... | Koochla. |
| Ointment | ... | ... | ... | Murhum. |
| Panting | ... | ... | ... | Hámpta; hánspháns. |
| Pulse | ... | ... | ... | Naree. |
| Rag, a clean | ... | ... | ... | Sádá chitra. |
| Rearing | ... | ... | ... | Alif paon. |
| Rheumatism | ... | ... | ... | Bat; bá, í. |
| Salt | ... | ... | ... | Neemuc; noon. |
| Sand | ... | ... | ... | Balu; ret. |
| Sawdust | ... | ... | ... | Ghoon; boora. |
| Scrotum | ... | ... | ... | Fotah. |
| Shivering | ... | ... | ... | Kupkupi; kampta. |
| Shying | ... | ... | ... | Burukta hai. |
| Sore | ... | ... | ... | Ghao; zakhm. |
| Sorethroat | ... | ... | ... | Kunt men durd. |

| | | | |
|--------------------|-----|-----|-----------------------------|
| Sound (faultless) | ... | ... | Beyaib. |
| Spavin | ... | ... | Hudda ; motrar. |
| Splint | ... | ... | Bail huddi. |
| Sprain | ... | ... | Moch ; pechish. |
| Steaming the head | ... | ... | Munh ko pani ke dhuan dena. |
| Stomach | ... | ... | Maida ; pait. |
| Strained sinew | ... | ... | Nuss ko pechish luga. |
| Stumbling | ... | ... | Tokar khata. |
| Sulphate of copper | ... | ... | Neela tutiya. |
| Ditto of iron | ... | ... | Huri kussees. |
| Ditto of zinc | ... | ... | Soofed tutiya. |
| Swelling | ... | ... | Phuláo. |
| Tar | ... | ... | Rál. |
| Temper, good | ... | ... | Mitha mizaj. |
| Ditto, hot | ... | ... | Gurm mizaj. |
| Ditto, vicious | ... | ... | Badmaish hai. |
| Thrush in foot | ... | ... | Pootli se rus ata. |
| Tongue | ... | ... | Jeeb. |
| Treacle | ... | ... | Tiriyák ; ráb. |
| Turnips | ... | ... | Shalgham. |
| Turpentine | ... | ... | Tarpeen ka tel. |
| Twitch | ... | ... | Kuchmul. |
| Urine | ... | ... | Pisab. |
| Ditto, bloody | ... | ... | Pisab men khoon ata. |
| Water, boiling | ... | ... | Phoota pani. |
| Ditto, lukewarm | ... | ... | Neem gurm pani. |
| Withers | ... | ... | Madáo ; shána. |
| Worms | ... | ... | Kenchwá ; Keera. |

PART XIV.

BETTING: THE THEORY AND PRACTICE EXPLAINED.

By the Author of

“HORSE NOTES BY MAJOR C.” AND “INDIAN NOTES ABOUT DOGS.”

(Reprinted by permission from the “Asian.”)

BETTING IN ENGLAND.—There are two systems of betting known on the Turf in England: first, “backing horses,” and the second, making a book or laying the odds.

In the first, you place reliance on your own judgment from what you know personally of the horse, or on what you may have heard from other persons. In the second, you (theoretically) make sure of gaining something whichever horse may win. To take an imaginary case: If five horses were to run, and you could bet £100 even money against each of them, you would only have to pay on one whilst receiving the same amount for each of the others, leaving you a balance of £300. But such a case could hardly be met with, the backer of a horse getting, as a rule, the odds, which vary in amount according to fancied probabilities of success.

To “make a book” you must bet a fixed sum, at the current odds, against a sufficient number of horses to cover the amount of odds laid together with a balance, which, after deducting

| | | | | | £ |
|-------|----|----|----|--------|--------|
| A | at | 2 | to | 1=1000 | to 500 |
| B | “ | 3 | “ | 1= “ | “ 333 |
| C | “ | 4 | “ | 1= “ | “ 250 |
| D | “ | 5 | “ | 1= “ | “ 200 |
| E | “ | 6 | “ | 1= “ | “ 166 |
| F | “ | 7 | “ | 1= “ | “ 143 |
| G | “ | 8 | “ | 1= “ | “ 125 |
| H | “ | 9 | “ | 1= “ | “ 111 |
| I | “ | 10 | “ | 1= “ | “ 100 |
| J | “ | 11 | “ | 1= “ | “ 90 |
| Total | | | | | £2,018 |

the stake of the winning horse, will be your profit. To make this clear let the first ten letters of the alphabet represent ten horses at the odds shown in the margin, and suppose you succeed in laying 1,000 pounds against each of them, the result would (omitting fractions for simplicity’s sake), be as here given. If the favourite A wins, you receive £1,518, *i.e.*,

£2,018 minus £500 the stake of A, and you have to pay £1,000 to the backer of A, leaving a profit to you of £518. If any horse other than A win, your profits are proportionately increased as the stake on it was less than that on A.

But if only the first three horses were bet on in consequence of the others not finding backers, or if the race consisted only of three horses, your book, made on precisely the same principle, MUST leave you a heavy loser whichever horse wins! If A win, you have to pay 1,000, whilst only receiving 333 from B and 250 from C. In fact, in the case above given, it is absolutely necessary to bet against the first six before you could make safe to win, and even then the profit, in case of A winning, would be only £92 namely:—

| | | |
|-------------------------|---|-------|
| Received from B | = | 333 |
| C | = | 250 |
| D | = | 200 |
| E | = | 166 |
| F | = | 143 |
| <hr/> | | |
| Total receipts | = | 1,092 |
| Deduct amount paid to A | = | 1,000 |
| <hr/> | | |
| Balance profit | = | 92 |

If any one of the five losers should prove a defaulter, there would be a dead loss instead of any profit.

In “making a book,” it is essential to keep the larger amount, in the above case £1,000, the same for each horse whatever the odds may be, and to let the smaller sum vary according to the odds. To prove this, take the odds as already given, but vary the long odds instead of the short, and we get the following result:—

| | £ | £ |
|---------------|-------------|----------|
| A at 2 to 1 = | 2,000 | to 1,000 |
| B „ 3 „ 1 = | 3,000 | „ 1,000 |
| C „ 4 „ 1 = | 4,000 | „ 1,000 |
| D „ 5 „ 1 = | 5,000 | „ 1,000 |
| E „ 6 „ 1 = | 6,000 | „ 1,000 |
| F „ 7 „ 1 = | 7,000 | „ 1,000 |
| G „ 8 „ 1 = | 8,000 | „ 1,000 |
| H „ 9 „ 1 = | 9,000 | „ 1,000 |
| I „ 10 „ 1 = | 10,000 | „ 1,000 |
| J „ 11 „ 1 = | 11,000 | „ 1,000 |
| <hr/> | | |
| Total | ... £10,000 | |

Now, if J win, you have to pay 11,000, whilst receiving only 1,000 apiece from nine other horses, and it is assumed that you have succeeded in finding persons to back each one of them, which might not be the case in actual practice. But if only the three horses at the top of the list are backed, and as before, A wins

you come off quits ; if B wins, you lose 1,000 clear, and if C wins, you have to pay 4,000 whilst only receiving 1,000 apiece from A and B.

The usual mode by which a professional bookmaker proceeds is first to give, at as early a date as possible, the long odds against every horse entered for a P.P. race, for which he can find backers. (By a P. P. or "Play or Pay" race is meant one in which the backer of a horse must pay his stake if it fails to win, even though it does not come to the starting post). The bookmaker will not generally lay more odds against any horse than the figure representing half the number likely to be entered; for instance, if there were thirty horses, he would not wish to lay more than 15 to 1 against any one of them. The reason for this is, that he cannot expect that more than half the horses will find backers, and he must keep on the safe side, but the more horses that find backers the better for him. It is greatly to his advantage if an outsider win, because, in that case, he does not lose the (relatively) heavy stake for which the favourite was backed. To make this clearer, refer to the first list of ten horses given above. Should J, the last on the list, win, the layer of the long odds, besides paying 1,000, only loses the small stake of £90, whereas if A win, he has still to pay the 1,000, and does not receive the £500 for which A was backed.

Having completed his book satisfactorily, the professional sees how much in any case he must win, and he can either invest this amount in backing any horse he fancies, or he can lay twice over against any horses which he thinks unlikely to win, or he may make a second book on the same principle as the first.

If a person could bet against every horse in a race, except the one or two that are most likely to win, it would considerably increase his profits. Hence the vociferous yells, so familiar to the ears of every frequenter of English race-courses, offers to bet against everything "bar one" or "bar two," the one or two barred, or in other words, against which the speaker declines to bet at all being those which, in his opinion, are likely to damage his profits.

A serious drawback to betting is the chance of not being paid when you do win. There are two modes in England of lessening this evil: one is, that either party to a bet may demand stakes to be made fourteen days before the race, provided that he can satisfy the Committee of Tattersall's that he has cause for so doing; the other way is, if one party to a bet is absent on the day of the race, the other can post a copy of the bet up in the ring one hour before the race to which the bet refers, and if no competent person makes himself responsible for the amount, a written declaration that the bet is void can

be given to the clerk of the stakes or to the clerk of the course, before the race is run.

Bets are void under certain circumstances, the chief of which is when there is no possibility of losing; such, for instance, as betting against a horse which had died before the bet was made. Any bet made by signal after a race has been run is not only void but fraudulent. It is also an admitted rule that all bets on matches and private sweepstakes depending between any two horses shall be void if those horses become the property of the same person, *or of his avowed confederate* after the bets were made. Again, if a match or sweepstake be made for any particular day in a race week, and it is by mutual consent changed to any other day in the same week, all bets must stand; but if, by mutual consent, the race is to be run *in a different week*, or if any difference whatever be made in the terms of the engagement, all bets made before the alteration are void.

Bets on races always follow the stakes, with two exceptions. The first exception is when the winning horse is disqualified from a default in making stakes; the second is when, *after the race is finished*, an objection is successfully made regarding incorrect pedigree or nomination. In both these cases the horse that came in first carries the bets, though he does not get the stakes. But if the owner of a horse, or his agent, by fraud or deceit, get a horse started in a race for which he is disqualified by the laws of racing, the bets go with the stakes, and it is immaterial whether the objection be made before or after the race is run.

There is a rule regarding forfeits reflecting on bets, which requires notice. If a bet be made in a match or sweepstakes with forfeit attached, thus £100, half forfeit, and both horses start, either party to the bet may elect to declare forfeit. But when he has done so, he gets nothing in event of the horse he backed winning the race; and if it lose, he pays half only.

The party who gives the odds has the option of either choosing a horse or the field; if he select a horse, the field means all the other horses running in that race.

When horses run a dead heat (that is, when they are so level at the winning post that the judge cannot give either the preference) for a plate or sweepstakes, and the owners consent to divide, all bets between such horses, or between either of them and the field, must be settled by the money betted being put together, and then divided in the same proportion as the stakes. If, however, you had backed one of the two horses that ran the dead heat against another horse which was beaten, you get half your bet if your horse gets half the prize; but if the dead heat be the first event of a double bet, the bet is void, unless one horse receives more than half of the prize which would constitute him a winner in a double event.

We will now explain the theory of "hedging," by which the possibility of losing money is avoided, whether the horse you back win the race or not, provided, you can get any one to accept your bets who will not prove a defaulter at settling day. The principle involved is really the same as the one well known in trade of buying in a cheap market whilst selling in a dear one. For instance, some months before a race, the odds against a horse which you fancy are, perhaps, 15 to 1, and you invest a hundred pounds on him, so, if he win, you will receive £1,500. Shortly before the race the odds against him fall to 5 to 1. You then bet £500 against him; if he win, you pay £500 on the second, and receive £1,500 on the first bet, leaving you a clear profit of £1,000. But if he lose, you come off quits, as you only pay £100 on the first, and receive the same amount on the second bet. If you had made the second bet £1,000 to £200 instead of only £500 to £100, you must win something whether your horse is beaten or not, but of course your possible profits are considerably lessened.

To be a successful bookmaker, a man must be well up in all racing matters, very clear-headed, and sharp at mental calculations; quick-witted to know when to snap up offers as fast as possible; indefatigable in his attention to the business, with a good strong constitution to stand the wear and tear of constantly attending race meetings.

BETTING IN INDIA.—The English system of betting, as described in this treatise, is not applicable to India for want of professional bookmakers. But where Englishmen are residing there will be horse racing, and when there is horse racing, betting seems inevitable; and if betting is to take place, there must be some system of obtaining the correct odds. Consequently in India an unique mode, called "double lotteries," is in general use, and the French *pari mutuel* has become acclimatised as a subsidiary plan for getting the odds. In former years gigantic lotteries were organised in all the larger towns, depending entirely on luck (that is, as many tickets as possible were sold, and the proceeds, less a percentage for the race funds, divided proportionately between those lucky enough to draw horses, which was as simple as an ordinary English raffle). But as these have been made illegal, we will not refer further to them, but will proceed to describe the system still in vogue.

The "double lottery" requires a special caution, or the newly arrived stranger who wishes to join may find himself considerably let in at the auction of horse's chances. *Every bid means double the amount named,—e.g.,* if one hundred rupees be the highest bid, the person making it has to pay two hundred, which is divided equally between the lottery-fund and the holder of the horse bid for. There are usually 100 tickets; the value

varies from four rupees each to the maximum amount, which is considered likely to suit the tastes of the majority of the subscriber, but the usual price throughout India is ten rupees per ticket.

Before races an ordinary is held, and first tickets are sold. Some persons having a superstitious penchant for particular numbers can gratify it by putting down their names singly for the number of their choice. But it is customary to toss for tickets, and to draw for them in sweeps. In tossing, the loser's name is put down first, and of course he pays for the tickets, though both winner and loser of the toss share profits equally. Thus "Smith to Brown four times" means that Smith has lost the prices of four tickets to Brown. It is absolutely necessary in asking the Secretary of the lottery for tickets to name the loser first, or he would not know to whom to apply for payment.

When the lottery is filled, the drawing for horses takes place. Generally two hats are used—one containing the numbers of the tickets marked in ink on wads, and the other holding the names of the horses written on folded slips of paper. Each hat is covered with a handkerchief, and some person pulls out a ticket from the first hat, calling out the number inscribed on it, when a second person takes one of the folded slips from the second hat, and reads aloud the name on it, which is of course duly recorded by the manager of the lottery.

So far the proceedings partake of the nature of sheer gambling, that is to say, trusting entirely to luck without any science. But next takes place the compulsory sale by auction of the horse's chances of winning: this more resembles the English views of betting, where judgment and knowledge (or supposed knowledge) of the subject predominate, though of course there is still a strong element of luck as in all cases of speculation.

The auction of tickets is conducted like any other auction, the only peculiarity being that the bidder pays the amount of his successful bid twice over; namely, once to the lottery fund and once to the person, or persons, who drew that horse, in the drawing of tickets.

The owner of the horse has a right, provided he exercise it at once, to take one-fourth share of the purchase, taking his proportionate share of profit or loss, and it is customary to allow him even so much as a half share. He must have, however, qualified himself to make his claim by taking one ticket at least for the lottery on that particular race. * No person can bid at the auction who has not taken a ticket in the Race Lottery.

This system of lotteries is the Indian mode of getting the odds, but the annoying part of it is, that you cannot tell what

odds you are going to get. In England you hear a man offering, say, 10 to 1, and of course there can be no doubt about the precise proportion ; but in lotteries it depends entirely on the actual amount realized by the auction-sale of the horse's chances, and this cannot be known until all have been disposed of. However if one cannot know beforehand what odds he is going to receive, the next best thing is to be certain what odds one has received ; this can be ascertained by the following calculation. Add together the price of all the tickets, and the prices realized by the auction ; from this total deduct the double price of the one particular horse regarding which the odds are to be found, and also the percentage of the lottery which is deducted for the race funds (usually five per cent.). As the balance is to the double price of that horse, such are the odds against him.

We now come to the "*Pari Mutuel*" which is adapted from the French. Close by the race stand is a long box with as many divisions as there are races to bet on, and in the lid are separate slits for each division. You write on a card the name of a horse, the amount for which you wish to back it, sign the document, and slip it into the slit marked with the name of the particular race regarding which you wish to speculate. Just before the race is run, the slit appertaining to it is closed to prevent further entries being made. Subsequently the total due from those who have backed losers is divided proportionately amongst those who backed the winner, less the percentage for the race fund. Here again, as in lotteries, there is uncertainty as to the amount of the odds you are receiving. If a certain number of persons were each bound to back one or the other of the horses for the same amount, the correct odds would result, but this cannot be expected. It is possible, though improbable, that you might stand to lose in any case : for instance, suppose you backed a horse for one hundred rupees whilst no one else made any bets on that race, or all backed the same horse, and that the percentage to race fund is five per cent. If your horse win, you simply get Rs. 95, that is, your own hundred less five for the race fund ; but if he loose, you forfeit the whole hundred, which would presumably go to the race fund.

THE TOTALIZATOR:—Is comparatively new in India, but in Australia, whence it was brought to this country, it is employed in the following manner :—The right to hold the office on the Race Course is put up to auction usually by the Race Stewards, who take care that the person permitted to purchase it is a trustworthy individual, not likely to bolt with the proceeds during the running of any race. Any notorious Welsher would therefore, have no chance of obtaining it, however high he might bid. The recognized profits are realized by deducting

10 per cent. from all winnings to cover expenses. The office itself consists of a movable booth, strongly resembling a temporary railway ticket office. There is the usual opening protected by wires through which you can make your wants known to the clerk inside, with a little ledge underneath it for receiving the coin. The resemblance to the railway system is enhanced by the tickets being similar, only with the name of a horse instead of that of a station. The price of the tickets is generally one pound, but can be fixed at any sum, provided it is properly notified to prevent subsequent disputes and mistakes. Above the clerk's desk, say eight feet from the ground exposed to public view, are places for large placards to hold the name of each horse on which betting can be effected, and underneath that is a sort of revolving disc to shew exactly the number of tickets which have been already purchased for that horse, besides, one to show the grand total of tickets disposed of. Please note this fact carefully, as herein lies the chief advantage of the Totalizator over the *pari mutuel*. As explained already, the great disadvantage of the latter is, that you cannot tell what odds you are receiving, and may, therefore, stand to win nothing, but to lose the whole of your investment if you name the wrong horse, or 5 per cent. of it if you name the right one, and no other persons have backed the remaining horses in the race ! If this were the only advantage, it would be sufficient to establish the superiority of the Totalisator, but it has others as well. For instance, all transactions are strictly cash : you *must* pay for the tickets as you take them, and if one of your's be that of the winning horse, you will be paid the minute the numbers are hoisted before the next race is run. Of course, if you do not hold a ticket for the winner, these subsequent proceedings have no interest for you ; you are, however, saved the bother of attending to pay up your losings, which is customary in India, where most transactions are on the credit principle. The winners are saved the mortification of hearing that their just dues cannot be satisfied in consequence of defaulting losers.

It is the duty of the clerk to change the outer discs according to each sale of a ticket. The purchaser should ascertain by an upward glance that this has been done correctly as regards his tickets, both for the horse selected and also for the number representing the grand total, as mistakes will arise in the best regulated establishments and the clerk has no sinecure. Of course a dishonest clerk has the power, after putting on a number, to take it off again with a view to pocketing the difference ; but instant detection would probably be inevitable, as so many eyes are fixed on the numbers to see how the odds are going with the view to a little plunging when the state of the market becomes suitable.

PART XV.

HELPING LADIES ON HORSEBACK.

NOTE.—*These suggestions are given as an addendum, that they may, if required, be removed from the rest of the work, which is necessarily unsuited, from its medical details, for the perusal of ladies.*

LADY MOUNTING. Groom should face horse's head, one hand on either side, holding bridle close to bit to keep horse steady.

Gentleman inspects saddle, bridle, girths, &c., to see all correct and then puts *stirrup over horse's neck* to be out of lady's way.

Lady stands quite close to horse's left side, facing same way as horse, right hand on the left pommel, left on gentleman's right shoulder.

Gentleman faces the lady, stooping with his fingers interlocked to form a rest for the lady's left foot.

Gentleman says "one, two, three," and at the word "three," the lady springs up from right instep, straightening left leg as she rises, he raising his hands till she has reached the saddle. He then gives her the stirrup and her whip.

Another plan, if the lady be very heavy, is for the gentleman to stand close alongside her, with his face towards the horse's head to receive her foot, in his hands as before described, only *under his right arm*. This gives him great power.

LADY DISMOUNTING. Gentleman with left hand holds reins as near as possible to horse's mouth, his left arm extended.

Lady takes her foot out of the stirrup, which is then placed over horse's neck by the gentleman. (*N.B.*—Don't forget this as many do.) She then lifts her right knee over the pommel, places her right hand on pommel and her left on gentleman's right shoulder or in his right hand, and *slides* (not jumps) down.

LADY IN DIFFICULTIES. Always ride on lady's right side, to shield her from any collision with passing carriages, besides keeping clear of her habit. If she gets frightened, and cannot control her horse, take one of your reins off and put it as a leading-rein to her bridle. If her horse bolts, on no account gallop *after her*, as it would make matters worse. If possible, by some short cut get ahead of her, and as she passes lay hold of her reins and riding by her side, gradually pull in her horse. The only other effective plan is for the lady to steer her horse *straight* up against any wall; even though she cannot pull him in, she may be able to do this.

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